BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Examine the Commission's Energy Efficiency Risk/Reward Incentive Mechanism.	Rulemaking 09-01-019 (Filed January 29, 2009)

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 M) NOTICE OF AVAILABILITY

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PACIFIC GAS AND ELECTRIC COMPANY

Dated: March 18, 2016

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Order Instituting Rulemaking to Examine the Commission's Energy Efficiency Risk/Reward Incentive Mechanism.	Rulemaking 09-01-019 (Filed January 29, 2009)

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NOTICE OF AVAILABILITY

Pacific Gas and Electric Company (PG&E) serves this Notice of Availability pursuant to Rule 1.9(c) of the Commission's Rules of Practice and Procedure. The Notice of Availability is appropriate under Rule 1.9 because of the voluminous size of the materials. These materials are now available on PG&E's website. To access the documents, please:

1) Go to: http://www.pge.com/regulation
2) Click on "Regulatory Case Documents" under "California Public Utilities Commission (CPUC)"
3) Select "Energy Efficiency Risk-Reward Incentive Mechanism OIR [R.09-01-019] from the case dropdown menu
4) Input the date from "03/18/16" to "03/18/16"
5) Click Search

The following appendices in support of PG&E's Proposal to Resolve Issues in Scope are available on PG&E's website:

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- Appendix B.3.3 - Gross Savings Impact of Adjustments Following Review of 27 Custom Project Evaluations

Appendix B.4 – PG&E Assessment of 2006-2008 Custom Project Impact Evaluations

Written requests for the appendices may also be submitted to PG&E by mail to Elisa Marty (E3M5@pge.com) or by phone (415) 973-8989.

Respectfully Submitted,

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APPENDIX A

Table A.10 - Calculating the Incremental Value of PG&E Adjustments Relative to Original Scenario 7-1 Values Using Original E3 C-E Calculator

Calculating Results of Adjustments to Lighting Programs

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits
PGE2000 - Original SAR Scenario 7-1			**635.51**	**94.64**	**-8.88**	**$ (1,301,115)**	**$ 60,416,144**
PG&E Scenarios							
PGE2000	All_I	Scenario 7a	657.48	97.37	-9.35	$ 5,742,485	$ 67,459,744
PGE2000	All_I	Scenario 7b: Carryover	**Full Value from Carryover Analysis is Incremental, as full costs are included in standard PGE2000 Calculations**				
PGE2000	All_I	Scenario 7b	1067.08	147.08	-17.81	$ 190,284,557	$ 206,112,411
PGE 2000 Differences/Adders							
PGE2000	All_I	Scenario 7a	21.97	2.73	-0.47	$ 7,043,600	$ 7,043,600
PGE2000	All_I	Scenario 7b: Carryover				$ 22,423,395	$ 22,423,395
PGE2000	All_I	Scenario 7b	431.56	52.44	-8.93	$ 191,585,672	$ 145,696,268

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits
PGE2080 - Original SAR Scenario 7-1			**318.74**	**86.95**	**10.37**	**$ 37,952,632**	**$ 97,496,849**
Updated Scenarios							
PGE2080	All_I	Scenario 7a	325.10	88.12	10.34	$ 39,635,007	$ 99,179,225
PGE2080	All_I	Scenario 7b: Carryover	**Full Value from Carryover Analysis is Incremental, as full costs are included in standard PGE2000 Calculations**				
PGE2080	All_I	Scenario 7b	645.87	152.44	8.43	$ 187,224,163	$ 185,734,176
PGE2080 Differences/Adders							
PGE2080	All_I	Scenario 7a	6.36	1.18	-0.04	$ 1,682,376	$ 1,682,376
PGE2080	All_I	Scenario 7b: Carryover				$ 10,255,282	$ 10,255,282
PGE2080	All_I	Scenario 7b	327.13	65.49	-1.94	$ 149,271,532	$ 88,237,326

Fabrication Projects Results

Fab - Original SAR Scenario 7-1

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits
PGE2004	All_I	Original Fabrication Projects	70.68	8.97	6.23	$ 42,367,464	$ 70,199,266
PGE2042	All_I	Original Fabrication Projects	19.72	2.46	1.11	$ 754,008	$ 3,797,106
PGE2046	All_I	Original Fabrication Projects	4.87	0.39	0.31	$ 1,417,989	$ 2,322,630
PGE2058	All_I	Original Fabrication Projects	30.49	3.11	0.00	$ 5,974,404	$ 10,219,020
PGE2062	All_I	Original Fabrication Projects	0.84	0.09	0.00	$ (1,432,167)	$ 50,872
PGE2064	All_I	Original Fabrication Projects	2.89	0.27	0.00	$ (1,871,239)	$ (372,722)
PGE2081	All_I	Original Fabrication Projects	4.06	0.44	0.00	$ (1,171,111)	$ 297,390
PGE2084	All_I	Original Fabrication Projects	5.97	0.93	0.00	$ (649,632)	$ (712,246)
PGE2087	All_I	Original Fabrication Projects	0.69	0.18	0.74	$ 721,416	$ 1,834,159

Fab Updated

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits
PGE2004	All_I	Modified Fabrication Projects	84.68	10.51	11.21	$ 88,867,353	$ 116,699,156
PGE2042	All_I	Modified Fabrication Projects	26.72	3.23	2.23	$ 17,903,180	$ 20,946,277
PGE2046	All_I	Modified Fabrication Projects	4.87	0.39	0.31	$ 1,417,989	$ 2,322,630
PGE2058	All_I	Modified Fabrication Projects	37.50	3.88	1.12	$ 16,547,052	$ 20,791,669
PGE2062	All_I	Modified Fabrication Projects	0.84	0.09	0.00	$ (1,432,167)	$ 50,872
PGE2064	All_I	Modified Fabrication Projects	2.89	0.27	0.00	$ (1,871,239)	$ (372,722)
PGE2081	All_I	Modified Fabrication Projects	4.06	0.44	0.00	$ (1,171,111)	$ 297,390
PGE2084	All_I	Modified Fabrication Projects	5.97	0.93	0.00	$ (649,632)	$ (712,246)
PGE2087	All_I	Modified Fabrication Projects	0.69	0.18	0.74	$ 721,416	$ 1,834,159

Fab Differences

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits
PGE2004	All_I	Modified Fabrication Projects	14.00	1.54	4.98	$ 46,499,890	$ 46,499,890
PGE2042	All_I	Modified Fabrication Projects	7.00	0.77	1.12	$ 17,149,172	$ 17,149,172
PGE2046	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ (0)	$ (0)
PGE2058	All_I	Modified Fabrication Projects	7.00	0.77	1.12	$ 10,572,649	$ 10,572,649
PGE2062	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ 0	$ -
PGE2064	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ 0	$ -
PGE2081	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ 0	$ -
PGE2084	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ (0)	$ (0)
PGE2087	All_I	Modified Fabrication Projects	0.00	0.00	0.00	$ (0)	$ (0)

Total Differences/Adders

EDProgramID	Scenario	Description	Annual_Net_GWh	UserEntered_MW	Annual_Net_Therms_MM	TRC_NetBenefits	PAC_NetBenefits	PEB (2/3 TRC)+(1/3 PAC)
N/A	All_I	Scenario 7a	28.32	3.91	-0.51	$ 8,725,976	$ 8,725,976	$ 8,725,976
N/A	All_I	Scenario 7b: Carryover	0.00	0.00	0.00	$ 28,283,186	$ 28,283,186	$ 28,283,186
N/A	All_I	Scenario 7b: CFL Combination	758.69	117.94	-10.87	$ 340,857,204	$ 233,933,594	$ 305,216,000
N/A	All_I	Scenario 7b: Custom Fabrication Projects	28.00	3.08	7.23	$ 74,221,710	$ 74,221,710	$ 74,221,710

Table A.11 - Total Net Benefits Using the Original, Carbon and RPS Calculators for the Programs with Modified Input Files

ORIGINAL E3 - MODIFIED INPUT Results

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	Sum of TRC_Elec_Benefits	Sum of TRC_Gas_Benefits	Sum of PAC_Elec_Benefits	Sum of PAC_Gas_Benefits
PGE2000	All I	Carryover			$ 28,897,637	$ (6,474,242)	$ 28,897,637	$ (6,474,242)
		Combination CFL	$ 190,284,557	$ 206,112,411				
PGE2004	All I	Custom Projects	$ 88,867,353	$ 116,699,156				
PGE2042	All I	Custom Projects	$ 17,903,180	$ 20,946,277				
PGE2046	All I	Custom Projects	$ 1,417,989	$ 2,322,630				
PGE2058	All I	Custom Projects	$ 16,547,052	$ 20,791,669				
PGE2062	All I	Custom Projects	$ (1,432,167)	$ 50,872				
PGE2064	All I	Custom Projects	$ (1,871,239)	$ (372,722)				
PGE2080	All I	Carryover			$ 10,866,375	$ (611,093)	$ 10,866,375	$ (611,093)
		Combination CFL	$ 187,224,163	$ 185,734,176				
PGE2081	All I	Custom Projects	$ (1,171,111)	$ 297,390				
PGE2084	All I	Custom Projects	$ (649,632)	$ (712,246)				
PGE2087	All I	Custom Projects	$ 721,416	$ 1,834,159	**PEB (2/3 TRC)+(1/3 PAC)**			
		Totals	**$ 530,520,240**	**$ 586,382,448**	**$ 549,140,976**			

Carbon E3 - MODIFIED INPUT Results

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	Sum of TRC_Elec_Benefits	Sum of TRC_Gas_Benefits	Sum of PAC_Elec_Benefits	Sum of PAC_Gas_Benefits
PGE2000	All I	Carryover			$ 32,187,411	$ (7,829,355)	$ 32,187,411	$ (7,829,355)
		Combination CFL	$ 230,755,143	$ 246,582,997				
PGE2004	All I	Custom Projects	$ 114,068,859	$ 141,900,662				
PGE2042	All I	Custom Projects	$ 23,832,369	$ 26,875,466				
PGE2046	All I	Custom Projects	$ (436,066)	$ 468,575				
PGE2058	All I	Custom Projects	$ 20,738,588	$ 24,983,205				
PGE2062	All I	Custom Projects	$ (1,374,473)	$ 108,566				
PGE2064	All I	Custom Projects	$ (1,666,155)	$ (167,639)				
PGE2080	All I	Carryover			$ 12,075,210	$ (750,439)	$ 12,075,210	$ (750,439)
		Combination CFL	$ 222,464,044	$ 220,974,056				
PGE2081	All I	Custom Projects	$ (936,292)	$ 532,208				
PGE2084	All I	Custom Projects	$ (290,582)	$ (353,176)				
PGE2087	All I	Custom Projects	$ 1,993,059	$ 3,105,802	**PEB (2/3 TRC)+(1/3 PAC)**			
		Totals	**$ 644,831,341**	**$ 700,693,550**	**$ 663,452,077.21**			

Carbon +RPS E3 - MODIFIED INPUT Results

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	Sum of TRC_Elec_Benefits	Sum of TRC_Gas_Benefits	Sum of PAC_Elec_Benefits	Sum of PAC_Gas_Benefits
PGE2000	All I	Carryover			$34,641,283.47	-$7,829,354.76	$34,641,283.47	-$7,829,354.76
		Combination CFL	$268,557,305.89	$284,385,160.04				
PGE2004	All I	Custom Projects	$119,453,887.36	$147,285,690.13				
PGE2042	All I	Custom Projects	$26,020,922.75	$29,064,019.86				
PGE2046	All I	Custom Projects	-$323,231.05	$581,410.05				
PGE2058	All I	Custom Projects	$22,962,320.64	$27,206,937.34				
PGE2062	All I	Custom Projects	-$1,307,211.80	$175,827.02				
PGE2064	All I	Custom Projects	-$1,438,598.80	$59,917.46				
PGE2080	All I	Carryover			$12,747,963.33	-$750,439.13	$12,747,963.33	-$750,439.13
		Combination CFL	$238,152,927.47	$236,662,939.88				
PGE2081	All I	Custom Projects	-$731,941.56	$736,558.93				
PGE2084	All I	Custom Projects	$2,756.20	-$59,858.92				
PGE2087	All I	Custom Projects	$2,044,606.64	$3,157,349.55				
		Totals	**$ 712,203,196**	**$ 768,065,404**	**$ 730,823,932**			

Table A.12 - Incremental Net Benefits of the Carbon and RPS Adjustments for the Programs with Modified Input Files

Carbon Impact - MODIFIED INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	Sum of TRC_Elec_Benefits	Sum of TRC_Gas_Benefits	Sum of PAC_Elec_Benefits	Sum of PAC_Gas_Benefits
PGE2000	All I	Carryover			$ 3,289,774	$ (1,355,113)	$ 38,661,653	$ (36,726,992)
		Combination CFL	$ 40,470,586	$ 40,470,586				
PGE2004	All I	Custom Projects	$ 25,201,506	$ 25,201,506				
PGE2042	All I	Custom Projects	$ 5,929,188	$ 5,929,188				
PGE2046	All I	Custom Projects	$ (1,854,055)	$ (1,854,055)				
PGE2058	All I	Custom Projects	$ 4,191,536	$ 4,191,536				
PGE2062	All I	Custom Projects	$ 57,694	$ 57,694				
PGE2064	All I	Custom Projects	$ 205,084	$ 205,084				
PGE2080	All I	Carryover			$ 1,208,835	$ (139,346)	$ 12,686,303	$ (11,616,814)
		Combination CFL	$ 35,239,880	$ 35,239,880				
PGE2081	All I	Custom Projects	$ 234,819	$ 234,819				
PGE2084	All I	Custom Projects	$ 359,070	$ 359,070				
PGE2087	All I	Custom Projects	$ 1,271,643	$ 1,271,643	**PEB (2/3 TRC)+(1/3 PAC)**			
		Totals	**$ 113,907,024**	**$ 113,907,024**	**$ 113,907,023.84**			

RPS Impact - MODIFIED INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	Sum of TRC_Elec_Benefits	Sum of TRC_Gas_Benefits	Sum of PAC_Elec_Benefits	Sum of PAC_Gas_Benefits
PGE2000	All I	Carryover		$ -	$ 2,453,873	$ -	$ 2,453,873	$ -
		Combination CFL	$ 37,802,163	$ 37,802,163				
PGE2004	All I	Custom Projects	$ 5,385,028	$ 5,385,028				
PGE2042	All I	Custom Projects	$ 2,188,554	$ 2,188,554				
PGE2046	All I	Custom Projects	$ 112,835	$ 112,835				
PGE2058	All I	Custom Projects	$ 2,223,732	$ 2,223,732				
PGE2062	All I	Custom Projects	$ 67,261	$ 67,261				
PGE2064	All I	Custom Projects	$ 227,556	$ 227,556				
PGE2080	All I	Carryover			$ 672,754	$ -	$ 672,754	$ -
		Combination CFL	$ 15,688,884	$ 15,688,884				
PGE2081	All I	Custom Projects	$ 204,351	$ 204,351				
PGE2084	All I	Custom Projects	$ 293,317	$ 293,317				
PGE2087	All I	Custom Projects	$ 51,548	$ 51,548	**PEB (2/3 TRC)+(1/3 PAC)**			
		Totals	**$ 66,951,304**	**$ 66,951,304**	**$ 66,951,304**			

Table A.13 - Total Net Benefits of the Programs with Unmodified Input Files

ORIGINAL E3 - ORIGINAL INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
Various	All I	Original Input	$ 144,609,684	$ 197,049,310

Carbon E3 - ORIGINAL INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
Various	All I	Original Input	$ 195,715,369	$ 248,154,995

Carbon + RPS E3 - ORIGINAL INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
Various	All I	Original Input	$ 226,987,650	$ 279,427,276

Table A.14 - Incremental Net Benefits of the Carbon and RPS Adjustments for the Programs with Unmodified Input Files

Carbon Impact - ORIGINAL INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	PEB (2/3 TRC)+(1/3 PAC)
Various	All I	Original Input	$ 51,105,685	$ 51,105,685	$ 51,105,685

RPS Impact - MODIFIED INPUT

EDProgramID	Scenario	Run Name/File Name	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	PEB (2/3 TRC)+(1/3 PAC)
Various	All I	Original Input	$ 31,272,281	$ 31,272,281	$ 31,272,281

Table A.15 - Incremental Net Benefits of the Carbon and RPS Adjustments for the Non-Pass Through Portion of Portfolio

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Total Carbon Impact

Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	PEB (2/3 TRC)+(1/3 PAC)
$ 165,012,709	$ 165,012,709	$ 165,012,709

Total RPS Impact

Sum of TRC_NetBenefits	Sum of PAC_NetBenefits	PEB (2/3 TRC)+(1/3 PAC)
$ 98,223,584	$ 98,223,584	$ 98,223,584

Table A.16 Original E3 - Results of Modified CFL Input Files (Scenario 7a)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2000	All_I	Scenario7aPGE2000.txt	657482216.5	97371.52623	-9353531.653	5742485.375	67459743.76
PGE2080	All_I	Scenario7aPGE2080.txt	325097013.1	88123.98131	10335411.17	39635007.16	99179225.09
Grand Total			**982579229.6**	**185495.5075**	**981879.5163**	**45377492.53**	**166638968.9**

Table A.17 Original E3 - Results of Modified CFL Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Lifecycle_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2000	All_I	Scenario7bPGE2000.txt	1067079655	147084.4842	-103128298.2	190284557.2	206112411.4
PGE2080	All_I	Scenario7bPGE2080.txt	645869343	152438.9989	64717323.56	187224163.3	185734175.7
Grand Total			**1712948998**	**299523.4831**	**-38410974.66**	**377508720.5**	**391846587.1**

Table A.18 Original E3 - Results of Modified Custom Project Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Lifecycle_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2004	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	84683313.81	10512.67583	224308277.9	88867353.32	116699156.1
PGE2042	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	26719753.13	3231.596578	44634554.67	17903180.38	20946277.49
PGE2046	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4871470.799	393.7951581	4678019.393	1417989.38	2322630.473
PGE2058	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	37495331.54	3880.642215	22438730	16547052.27	20791668.97
PGE2062	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	843036.1553	87.84784673	0	-1432166.884	50871.9336
PGE2064	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	2894777.73	269.0515131	0	-1871238.647	-372722.3853
PGE2081	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4055688.362	442.5470546	0	-1171110.98	297389.512
PGE2084	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	5966889.928	931.5365879	0	-649631.7225	-712245.8408
PGE2087	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	688246.5964	176.9988623	14670111.46	721415.7471	1834158.658
Grand Total			**168218508**	**19926.69165**	**310729693.4**	**120332842.9**	**161857184.9**

Table A.19 Original E3 - Results of Original Project Input Files

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Lifecycle_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2001	All_I	ERTInput_PGEAg_Multi_2.txt	71737683.43	9779.947413	136023035.8	78402211.12	94378846.51
PGE2002	All_I	ERTInput_ADM_PGE2002.txt	12503115.44	5557.668	4827504.44	4197829.196	4965434.41
PGE2003	All_I	ERTInput_SmCom_PGE2003.txt	26708893.76	3803.749276	-1267188.29	11160281.19	13147692.11
PGE2005	All_I	ERTInput_ADM-SBW-PGE2005.txt	27106979.31	3584.025692	4507885.594	-1601057.083	5614626.067
PGE2006	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	4216386.208	686.9265835	1416338.638	-223985.4308	116167.672
PGE2007	All_I	ERTInput_ADM-KEMA-SBW_PGE2007.txt	34756543.87	6111.32532	6849466.785	4918821.674	7919371.907
PGE2008	All_I	ERTInput_ADM_PGE2008.txt	3164713.763	466.821	3766512.64	-396235.6208	40466.7503
PGE2009	All_I	ERTInput_RNC_PGE2009.txt	3165020.693	2809.356479	3506244.279	-5837887.266	-3268737.939
PGE2015	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	12519582.94	2339.663488	4585618.162	1824027.306	3133198.167
PGE2016	All_I	ERTInput_SmCom_PGE2016.txt	11693260.99	3667.484529	771056.3372	1070579.464	1394969.638
PGE2017	All_I	ERTInput_SmCom_PGE2017.txt	10440779.69	2542.857467	882392.7132	1478798.096	1403506.733
PGE2018	All_I	ERT_Input_LGP_CCC.txt	5619506.645	1007.279388	3733445.395	1909353.297	1171861.698
PGE2020	All_I	ERTInput_ADM_Multi.txt	40836918.28	8720.951435	936732.1364	7313716.454	7966587.537
PGE2021	All_I	ERTInput_SmCom_PGE2021.txt	9505972.224	1831.590849	-271041.2821	-2345920.956	336452.1259
PGE2025	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	3741440.42	679.3754785	49630.82013	-969412.4115	-223207.2663
PGE2026	All_I	ERTInput_ADM_Multi.txt	860903.8372	189.76931	0	-192553.7413	-159498.7946
PGE2029	All_I	ERTInput_ADM_Multi.txt	34332872.71	4947.952758	291699.0963	3938936.793	5421647.633
PGE2032	All_I	ERTInput_SmCom_PGE2032.txt	5952362.328	881.7478405	378022.5419	475402.5159	1513796.923
PGE2033	All_I	ERTInput_ADM_Multi.txt	4220359.213	791.817197	-772.7544784	176874.1168	254138.2868
PGE2035	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	10069162.47	1510.885244	4199495.493	3642503.562	3900414.682
PGE2036	All_I	ERT_Input_LGP_UCCSU.txt	23490956.97	3659.388659	25659073.42	16536500.14	14587830.3
PGE2045	All_I	ERTInput_PGEAg_Multi_2.txt	8284648.557	1576.222244	0	2207710.682	4069181.215
PGE2049	All_I	ERTInput_PGEAg_Multi_2.txt	3739277.279	795.8930798	2027149.783	484614.5283	789805.0631
PGE2050	All_I	ERTInput_ADM_PGE2050.txt	756083.807	285.02382	41993.02	-1078599.079	-1052324.41
PGE2052	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	20201632.57	4391.763712	2220214.789	3059359.165	4437340.945
PGE2054	All_I	ERTInput_SmCom_PGE2054.txt	13444431.55	3536.645684	-1070230.017	-156473.906	1178073.037
PGE2056	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1430574.112	17.44677849	224636.4265	-650412.1905	-778713.7639
PGE2063	All_I	ERTInput_ADM_Multi.txt	11070320.48	1378.736059	0	172736.1447	-62526.9441
PGE2065	All_I	ERTInput_PGEAg_Multi_2.txt	16389329.18	1229.149254	0	7102951.186	7845979.593
PGE2066	All_I	ERTInput_ADM_Multi.txt	45451274.46	4148.085956	126147.3494	4161695.237	11946789.97
PGE2068	All_I	ERTInput_SPComm_PGE2068.txt	13718362.49	1084.842094	221298.8928	1889105.304	2136767.21
PGE2070	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	944445.9683	96.67991372	0	-522412.1886	-457058.4554
PGE2071	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	518482.7612	27.01894816	7329.035344	-709798.3522	-577611.7631
PGE2072	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1741567.865	228.3996136	554284.9479	-633202.2875	-669936.7392
PGE2077	All_I	ERTInput_ADM_PGE2077.txt	5871578.167	1206.406629	166138.9966	399551.1497	519152.5218
PGE2078	All_I	Cadmus_PGE2078_ERT.txt	4322798.104	1264.917698	867073.5673	-495902.7565	-510646.7989
PGE2079	All_I	ERTInput_PGEAg_Multi_2.txt	9693471.2	1270.72	0	5848080.385	5380714.964
PGE2086	All_I	ERTInput_ADM_PGE2086.txt	0	0	2038256.68	373724.8783	550797.0082
PGE2088	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	414769.5708	16.6451599	34964.47681	-777948.3692	-501771.8376
PGE2090	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	422650.139	31.35704127	282642.3177	-358956.263	-294428.7064
PGE2091	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1089966.376	114.2683253	25431.03679	-3949947.705	-3746112.931
PGE2094	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	7386800.955	1294.952125	0	2765025.899	3230275.313
Grand Total			**523535880.8**	**89565.75754**	**208612483.3**	**144609683.9**	**197049309.6**

Table A.20 Carbon E3 - Results of Modified CFL Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2000	All_I	Scenario7bPGE2000.txt	1067079655	147084.4842	-17812181.3	230755142.9	246582997
PGE2080	All_I	Scenario7bPGE2080.txt	645869343	152438.9989	8431416.461	222464043.7	220974056.1
Grand Total			**1712948998**	**299523.4831**	**-9380764.841**	**453219186.5**	**467557053.1**

Table A.21 Carbon E3 - Results of Modified Custom Project Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2004	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	84683313.81	10512.67583	11213958.33	114068859.4	141900662.1
PGE2042	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	26719753.13	3231.596578	2231727.733	23832368.59	26875465.7
PGE2046	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4871470.799	393.7951581	311867.9596	-436065.7283	468575.3652
PGE2058	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	37495331.54	3880.642215	1121936.5	20738588.48	24983205.18
PGE2062	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	843036.1553	87.84784673	0	-1374472.502	108566.3162
PGE2064	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	2894777.73	269.0515131	0	-1666154.911	-167638.6497
PGE2081	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4055688.362	442.5470546	0	-936292.4249	532208.0673
PGE2084	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	5966889.928	931.5365879	0	-290561.8663	-353175.9846
PGE2087	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	688246.5964	176.9988623	744929.4853	1993058.676	3105801.587
Grand Total			**168218508**	**19926.69165**	**15624420.01**	**155929327.7**	**197453669.7**

Table A.22 - Carbon E3 - Results of Original Project Input Files

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2001	All_I	ERTInput_PGEAg_Multi_2.txt	71737683.43	9779.947413	6859867.208	95787382.97	111764018.4
PGE2002	All_I	ERTInput_ADM_PGE2002.txt	12503115.44	5557.668	276080.61	5548076.403	6315681.617
PGE2003	All_I	ERTInput_SmCom_PGE2003.txt	26708893.76	3803.749276	-78759.08528	13140831.54	15128242.47
PGE2005	All_I	ERTInput_ADM-SBW-PGE2005.txt	27106979.31	3584.025692	234795.7658	-299641.2372	6916041.913
PGE2006	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	4216386.208	686.9265835	72993.02805	222709.1631	562862.2659
PGE2007	All_I	ERTInput_ADM-KEMA-SBW_PGE2007.txt	34756543.87	6111.32532	506741.4195	8051755.992	11052306.23
PGE2008	All_I	ERTInput_ADM_PGE2008.txt	3164713.763	466.821	188091.768	59886.7086	496589.0796
PGE2009	All_I	ERTInput_RNC_PGE2009.txt	3165020.693	2809.356479	201621.8778	-5259647.435	-2690498.108
PGE2015	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	12519582.94	2339.663488	322234.0397	2922442.259	4231613.12
PGE2016	All_I	ERTInput_SmCom_PGE2016.txt	11693260.99	3667.484529	39925.74429	1879208.573	2203598.747
PGE2017	All_I	ERTInput_SmCom_PGE2017.txt	10440779.69	2542.857467	48495.6738	2183361.326	2108069.963
PGE2018	All_I	ERT_Input_LGP_CCC.txt	5619506.645	1007.279388	241717.8698	2708834.307	1971342.708
PGE2020	All_I	ERTInput_ADM_Multi.txt	40836918.28	8720.951435	119336.1014	9400091.03	10052962.11
PGE2021	All_I	ERTInput_SmCom_PGE2021.txt	9505972.224	1831.590849	-25849.1311	-1808762.653	873610.4289
PGE2025	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	3741440.42	679.3754785	3357.042195	-748135.0131	-1929.8679
PGE2026	All_I	ERTInput_ADM_Multi.txt	860903.8372	189.76931	0	-153272.5291	-120217.5824
PGE2029	All_I	ERTInput_ADM_Multi.txt	34332872.71	4947.952758	31963.08304	5646046.878	7128757.718
PGE2032	All_I	ERTInput_SmCom_PGE2032.txt	5952362.328	881.7478405	32555.81774	907589.8708	1945984.278
PGE2033	All_I	ERTInput_ADM_Multi.txt	4220359.213	791.817197	-100.78192	386388.4947	463652.6648
PGE2035	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	10069162.47	1510.885244	284905.6208	4766961.646	5024872.767
PGE2036	All_I	ERT_Input_LGP_UCCSU.txt	23490956.97	3659.388659	1486651.651	20593463.93	18644794.08
PGE2045	All_I	ERTInput_PGEAg_Multi_2.txt	8284648.557	1576.222244	0	2742275.806	4603746.339
PGE2049	All_I	ERTInput_PGEAg_Multi_2.txt	3739277.279	795.8930798	105659.786	890721.6297	1195912.165
PGE2050	All_I	ERTInput_ADM_PGE2050.txt	756083.807	285.02382	2594.912	-1043978.967	-1017704.298
PGE2052	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	20201632.57	4391.763712	259107.566	4287302.318	5665284.098
PGE2054	All_I	ERTInput_SmCom_PGE2054.txt	13444431.55	3536.645684	-81294.15091	621915.2477	1956462.191
PGE2056	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1430574.112	17.44677849	57143.85444	-571366.1928	-699667.7662
PGE2063	All_I	ERTInput_ADM_Multi.txt	11070320.48	1378.736059	0	749312.8646	514049.7758
PGE2065	All_I	ERTInput_PGEAg_Multi_2.txt	16389329.18	1229.149254	0	8254227.404	8997255.81
PGE2066	All_I	ERTInput_ADM_Multi.txt	45451274.46	4148.085956	21987.00752	6660018.977	14445113.71
PGE2068	All_I	ERTInput_SPComm_PGE2068.txt	13718362.49	1084.842094	34567.64472	2667674.628	2915336.535
PGE2070	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	944445.9683	96.67991372	0	-455723.6208	-390369.8876
PGE2071	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	518482.7612	27.01894816	458.064709	-677966.0366	-545779.4476
PGE2072	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1741567.865	228.3996136	62766.74726	-480114.7943	-516849.2459
PGE2077	All_I	ERTInput_ADM_PGE2077.txt	5871578.167	1206.406629	18232.90681	789912.6659	909514.0381
PGE2078	All_I	Cadmus_PGE2078_ERT.txt	4322798.104	1264.917698	69251.23564	-126029.4971	-140773.5399
PGE2079	All_I	ERTInput_PGEAg_Multi_2.txt	9693471.2	1270.72	0	6558112.839	6090747.418
PGE2086	All_I	ERTInput_ADM_PGE2086.txt	0	0	104393	557330.308	734402.4379
PGE2088	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	414769.5708	16.6451599	7014.819186	-758543.2225	-482366.6909
PGE2090	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	422650.139	31.35704127	31416.45516	-300511.4043	-235983.8477
PGE2091	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1089966.376	114.2683253	8566.828905	-3901071.019	-3697236.245
PGE2094	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	7386800.955	1294.952125	0	3316297.02	3781546.434
Grand Total			**523535880.8**	**89565.75754**	**11548492**	**195715369.2**	**248154994.9**

Table A.23 Carbon-RPS E3 - Results of Modified CFL Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2000	All_I	Scenario7bPGE2000.txt	1067079655	147084.4842	-17812181.3	268557305.9	284385160
PGE2080	All_I	Scenario7bPGE2080.txt	645869343	152438.9989	8431416.461	238152927.5	236662939.9
Grand Total			**1712948998**	**299523.4831**	**-9380764.841**	**506710233.4**	**521048099.9**

Table A.24 Carbon-RPS E3 - Results of Modified CFL FAB Input Files (Scenario 7b)

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2004	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	84683313.81	10512.67583	11213958.33	119453887.4	147285690.1
PGE2042	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	26719753.13	3231.596578	2231727.733	26020922.75	29064019.86
PGE2046	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4871470.799	393.7951581	311867.9596	-323231.0455	581410.048
PGE2058	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	37495331.54	3880.642215	1121936.5	22962320.64	27206937.34
PGE2062	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	843036.1553	87.84784673	0	-1307211.799	175827.019
PGE2064	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	2894777.73	269.0515131	0	-1438598.804	59917.4576
PGE2081	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	4055688.362	442.5470546	0	-731941.5585	736558.9337
PGE2084	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	5966889.928	931.5365879	0	2755.195	-59858.9233
PGE2087	All_I	Scenario7bERTInput_PGEInd_Multi_02_22_10.txt	688246.5964	176.9988623	744929.4853	2044606.642	3157349.553
Grand Total			**168218508**	**19926.69165**	**15624420.01**	**166683509.4**	**208207851.4**

Table A.25 Carbon-RPS E3 - Results of Original Project Input Files

EDProgramID	Scenario	DataFileName	Sum of Annual_Net_kWh	Sum of UserEntered_kW	Sum of Annual_Net_Therms	Sum of TRC_NetBenefits	Sum of PAC_NetBenefits
PGE2001	All_I	ERTInput_PGEAg_Multi_2.txt	71737683.43	9779.947413	6859867.208	101457603.4	117434238.8
PGE2002	All_I	ERTInput_ADM_PGE2002.txt	12503115.44	5557.668	276080.61	6493184.005	7260789.219
PGE2003	All_I	ERTInput_SmCom_PGE2003.txt	26708893.76	3803.749276	-78759.08528	15156776.79	17144187.72
PGE2005	All_I	ERTInput_ADM-SBW-PGE2005.txt	27106979.31	3584.025692	234795.7658	1806952.707	9022635.858
PGE2006	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	4216386.208	686.9265835	72993.02805	533842.141	873995.2438
PGE2007	All_I	ERTInput_ADM-KEMA-SBW_PGE2007.txt	34756543.87	6111.32532	506741.4195	10517976.84	13518527.07
PGE2008	All_I	ERTInput_ADM_PGE2008.txt	3164713.763	466.821	188091.768	289811.2031	726513.5742
PGE2009	All_I	ERTInput_RNC_PGE2009.txt	3165020.693	2809.356479	201621.8778	-4994818.564	-2425669.237
PGE2015	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	12519582.94	2339.663488	322234.0397	3599296.678	4908467.538
PGE2016	All_I	ERTInput_SmCom_PGE2016.txt	11693260.99	3667.484529	39925.74429	2474711.999	2799102.172
PGE2017	All_I	ERTInput_SmCom_PGE2017.txt	10440779.69	2542.857467	48495.6738	2751305.454	2676014.091
PGE2018	All_I	ERT_Input_LGP_CCC.txt	5619506.645	1007.279388	241717.8698	3128441.484	2390949.885
PGE2020	All_I	ERTInput_ADM_Multi.txt	40836918.28	8720.951435	119336.1014	10916231.19	11569102.27
PGE2021	All_I	ERTInput_SmCom_PGE2021.txt	9505972.224	1831.590849	-25849.1311	-1348298.244	1334074.838
PGE2025	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	3741440.42	679.3754785	3357.042195	-596986.1609	149218.9846
PGE2026	All_I	ERTInput_ADM_Multi.txt	860903.8372	189.76931	0	-128449.7984	-95394.8516
PGE2029	All_I	ERTInput_ADM_Multi.txt	34332872.71	4947.952758	31963.08304	6876382.946	8359093.786
PGE2032	All_I	ERTInput_SmCom_PGE2032.txt	5952362.328	881.7478405	32555.81774	1236708.308	2275102.716
PGE2033	All_I	ERTInput_ADM_Multi.txt	4220359.213	791.817197	-100.78192	533584.673	610848.8432
PGE2035	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	10069162.47	1510.885244	284905.6208	5435633.091	5693544.212
PGE2036	All_I	ERT_Input_LGP_UCCSU.txt	23490956.97	3659.388659	1486651.651	22353731.41	20405061.56
PGE2045	All_I	ERTInput_PGEAg_Multi_2.txt	8284648.557	1576.222244	0	3221881.557	5083352.09
PGE2049	All_I	ERTInput_PGEAg_Multi_2.txt	3739277.279	795.8930798	105659.786	1106750.806	1411941.341
PGE2050	All_I	ERTInput_ADM_PGE2050.txt	756083.807	285.02382	2594.912	-1023060.094	-996785.4241
PGE2052	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	20201632.57	4391.763712	259107.566	5029315.884	6407297.664
PGE2054	All_I	ERTInput_SmCom_PGE2054.txt	13444431.55	3536.645684	-81294.15091	1444352.868	2778899.811
PGE2056	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1430574.112	17.44677849	57143.85444	-536985.7418	-665287.3151
PGE2063	All_I	ERTInput_ADM_Multi.txt	11070320.48	1378.736059	0	1222459.64	987196.5514
PGE2065	All_I	ERTInput_PGEAg_Multi_2.txt	16389329.18	1229.149254	0	9445255.166	10188283.57
PGE2066	All_I	ERTInput_ADM_Multi.txt	45451274.46	4148.085956	21987.00752	8751487.667	16536582.4
PGE2068	All_I	ERTInput_SPComm_PGE2068.txt	13718362.49	1084.842094	34567.64472	3291519.682	3539181.589
PGE2070	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	944445.9683	96.67991372	0	-391272.3796	-325918.6464
PGE2071	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	518482.7612	27.01894816	458.064709	-648482.294	-516295.705
PGE2072	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1741567.865	228.3996136	62766.74726	-400743.5653	-437478.0169
PGE2077	All_I	ERTInput_ADM_PGE2077.txt	5871578.167	1206.406629	18232.90681	1053160.401	1172761.773
PGE2078	All_I	Cadmus_PGE2078_ERT.txt	4322798.104	1264.917698	69251.23564	116022.0571	101278.0142
PGE2079	All_I	ERTInput_PGEAg_Multi_2.txt	9693471.2	1270.72	0	7303958.803	6836593.382
PGE2086	All_I	ERTInput_ADM_PGE2086.txt	0	0	104393	557330.308	734402.4379
PGE2088	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	414769.5708	16.6451599	7014.819186	-747391.6327	-471215.1011
PGE2090	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	422650.139	31.35704127	31416.45516	-284629.249	-220101.6924
PGE2091	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	1089966.376	114.2683253	8566.828905	-3869100.764	-3665265.99
PGE2094	All_I	ERTInput_SBW_Multi_RCx_Programs.txt	7386800.955	1294.952125	0	3852199.24	4317448.654
Grand Total			**523535880.8**	**89565.75754**	**11548492**	**226987649.9**	**279427275.7**

APPENDIX B.1

APPENDIX B.1

SUPPORTING DOCUMENTATION AND METHODOLOGY FOR UPDATING E3 COST-EFFECTIVENESS CALCULATOR TO INCLUDE THE UPDATED CARBON VALUE AND VALUES FOR RENEWABLE PORTFOLIO STANDARD

1. Background on the E3 models:

There is a series of E3 models used to define and evaluate cost effectiveness, and each is a necessary part of the calculation. These models are:

- The Avoided Cost Model
- Preprocessors (four related models in the 2006-2008 period)
- The Cost Effectiveness (C-E) Model (commonly referred to as the "E3 Model")

Most stakeholders will be familiar with E3 Model, as it is widely used by program administrators to compute and report cost effectiveness of a portfolio or individual program. To minimize ambiguity here, since all of these models are E3 models, the Cost Effectiveness model is referred here to as the C-E model. The energy and technology parameters used in the C-E are outputs from the Avoided Cost model. The preprocessors are needed to reshape the Avoided Cost model output into the appropriate input shape for the C-E. The models are updated every few years, so the 2006-2008 versions are slightly different than the current versions.

Model Names and Vintage

The C-E version used for the evaluation of PG&E's 2006-2008 portfolio through the ERT was ***PG&E Tool 4f2.xls*** and can be found on E3's website.[1/] Each C-E version requires a specific input, so is matched to specific Avoided Cost and preprocessor versions. The appropriate Avoided Cost model for this C-E, ***cpucAvoided26-1_update3-20-06.xls***, is archived on E3's website;[2/] however, the preprocessors for ***PG&E Tool 4f2.xls*** are not. PG&E obtained

1/ Current and historical Cost Effectiveness models: https://ethree.com/public_projects/cpuc4.php

2/ Current and historical Avoided Cost models: https://ethree.com/public_projects/cpuc5.php

these preprocessors directly from E3[3/] which includes the following four preprocessors and the necessary supporting files:

- ***PG&EComCalcHrly_6-1-06.xls***
- ***PG&EComCalcTOU_6-1-06.xls***
- ***PG&EResCalcHrly_6-1-06.xls***
- ***PG&EResCalcTOU_6-1-06.xl*)**

The following sections describe how the typical user interacts with each of the E3 calculators. For questions about methodologies and computations within the model, please see E3's model documentation.[4/]

Avoided Cost Model

The Avoided Cost model defines all the big picture values, such as market forecast, economic parameters (e.g. discount rates), and the costs of energy, emissions, Transmission & Distribution (T&D), Renewable Portfolio Standard (RPS), and others. The default parameters in the model are set by E3 as the official inputs for that era, so no adjustments are needed to replicate the historical output.

Pressing the macro button "Export Outputs to File" on the "*Calculate 8760x20*" tab.[5/] Once pressed, the model will prompt the user to answer three questions:

3/ Brian Horii, E3, Personal Communication, March 1, 2016

4/ E3 Energy Planning Tools, https://ethree.com/public_projects/energy_planning_tools.php

5/ The "Export Outputs to File" macro button is found near cell k8 on the "*Calculate 8760x20*" tab of the Avoided Cost model.

PG&E Table 1

Avoided Cost Options and Recommended Answers

Questions	Recommended Answers
Generate results for which voltage level?	Secondary[6/]
Generate Results for Which Utility?	PG&E
Generate Summary or Hourly Results?	Hourly

The output of the model is a set of climate zone (CZ) specific files for hourly avoided costs ($/MWh) –8760 hours per year over 20 years. Each of these files includes hourly values for regional tabs (different number for each CZ) and an hourly weighted average tab for the CZ. For a PG&E run, there are 10 such files for CZ1, 2, 3A, 3B, 4, 5, 11, 12, 13, and CZ16. With all model options turned on, this macro will produce the hourly avoided cost per CZ for T&D, market expectations, generation, emissions –everything.

However, the C-E model requires that the T&D avoided costs be entered separately than the other avoided costs. So, to properly execute the Avoided Cost model, requires two runs, or scenarios: one for T&D costs, and the other for generation and environmental (Gen&Env) costs. Selecting the scenario is done by adjusting which components are turned on for the scenario. For the T&D Scenario, T&D is set to TRUE, and both Market and Environment components are set to FALSE. For the Gen&Env scenario, the component settings are reversed.[7/] Since the two scenarios use the same underlying engine, the files need to be manually renamed between scenarios to avoid overwriting the first output with the second output.

For a T&D scenario, these files represent the avoided T&D costs for each climate zone. For a Gen&Env scenario, each tab is identical (since T&D is turned off) so any one represents

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6/ Brian Horii, E3, Personal Communication, February 22, 2016, "[E3] assume[s] all customers are taking service at secondary service in the E3 Calculator", other options are Transmission and Primary.

7/ These component flags are found in cells I5:I7 on the "*Calculate 8760x20*" tab of the Avoided Cost Model.

the combined market and environmental avoided costs. Each scenario takes about 20 minutes to run on a modern laptop. Once both scenarios are complete, the Gen&Env result and the weighted average T&D results are manually transferred to the preprocessor input file as described below.

Preprocessors

Apart from the four preprocessor models listed above, there are several supporting files required during operation. These include predetermined residential and commercial load shape files showing technology specific 8760 profiles: ***resData.xls*** and ***COMHRLY.xls*** respectively, and the Avoided Cost model outputs stored in ***PG&EElec_6-1-06.xls***.

Before running any of the preprocessors, the Avoided Cost model outputs (T&D and Gen&Env) need to be inserted into *PG&EElec_6-1-06.xls*. This file includes one tab labelled Gen&Env and ten CZ-specific weighted average tabs for T&D avoided costs. To incorporate new T&D Avoided Cost model outputs, the weighted average tab from each CZ file is copied onto the equivalent tab in *PG&EElec_6-1-06.xls* (these CZ files must be from the T&D Avoided Cost scenario as described above). To incorporate new Gen&Env Avoided Cost model outputs, copy any tab from any CZ file (from the non-T&D Avoided Cost scenario) onto the "Gen&Env" tab of *PG&EElec_6-1-06.xls* (since T&D was turned off for this Avoided Cost model scenario, all tabs are identical –i.e. not CZ specific).

Once the Avoided Cost model outputs have been inserted, each of the four preprocessors can be executed in turn. To run each preprocessor, press the "Batch macro" button found on the "Main" tab of each model. Each model takes about ten minutes to run except for the Commercial Hourly (*PG&EComCalcHrly_6-1-06.xl)* model which takes about three hours (a result of having over 300 technology -specific 8760 load shapes). The order in which they are run does not matter since the output of each is stored separately. These outputs are stored in each respective file on the "Output" tab, and these tabs are the inputs the C-E model.

Cost Effectiveness Model

The preprocessed, Avoided Cost results are used to update the "*CostE*" tab of the C-E model. In the 2006-2008 C-E model, there are over 6000 lines of inputs. Each line comes from a

specific line in one of the preprocessor outputs. The task of updating the *CostE* tab is a manual copy-paste exercise. Once updated, the C-E model is ready to run.

2. Updating Avoided Cost of Carbon

The original Avoided Cost model includes the carbon prices (in 2006$) through 2025, but the model includes an increasing price through 2030 (See Table X). These values can be found on row 16 of the "Emissions" Tab of the Avoided Cost model.

PG&E Table 2

Carbon prices in Avoided Cost model (2006$)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
CO_2 ($/ton)	$8.82	$9.26	$9.72	$10.21	$10.72	$11.26	$11.82	$12.41	$13.03	$13.68

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
$14.37	$15.09	$15.84	$16.63	$17.46	$18.34	$19.25	$20.22	$21.07	$21.96

Modifying the nominal price of carbon requires manually overwriting the existing prices with the new price. For our scenario, we have set each year to be equal to $30/ton.

Once the carbon price has been updated, the Avoided Cost model, preprocessors, and the C-E model will all need to be run in turn to incorporate the new pricing.

3. Adding Avoided Cost of RPS

A Renewable Portfolio Standard (RPS) requires a certain percentage of delivered energy be renewable energy, but renewable energy is typically higher than other sources of energy, especially in the early years. One can estimate the renewable premium (the costs over and above conventional generation costs) that RPS contracts carry and then calculate the portion of these costs that would be avoided by reducing load through energy efficiency and other demand-side resources.

In the 2006-08 period, an avoided RPS had not yet been included in the avoided cost calculator. For energy efficiency, this avoided cost was incorporated into the 2011 avoided cost update (most recent version). So PG&E uses the methodology in the modern version of Avoided

Cost calculator[8/] to align with the SB107 legislation in place at the time (a 20% requirement in 2010 and 33% requirement in 2020).[9/] PG&E then took the resulting avoided RPS costs (see Table 2), and added these to the hourly energy value results of the 2006 avoided cost outputs.[10/] This is consistent with how this value is incorporated into the current version of the model. PG&E has updated its ERT model to include the Avoided RPS with the GHG Adder

PG&E Table 3

RPS Avoided Costs in the model

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Avoided Cost ($/MWh)	0	0	0	0	10.00	10.20	10.40	10.61	10.82	11.04

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
11.15	10.88	10.73	10.59	17.20	16.87	16.55	16.01	16.07	15.13

2026	2027	2028	2029	2030
14.22	13.36	12.56	11.78	10.93

8/ Available here: https://ethree.com/documents/DERAvoidedCostModel_v3_9_2011_v4d.xlsm

9/ Bill available here: http://www.energy.ca.gov/portfolio/documents/documents/sb_107_bill_20060926_chaptered.pdf

10/ Brian Horii, E3, Personal Communication, March 11, 2016, Brian said the proper place to add the Avoided RPS values in with other calculated avoided costs is on the Gen&Env tab of the preprocessor input. The Gen&Env tab includes hourly avoided costs output from the Avoided Cost calculator, so the Avoided RPS can be added to every hour of the profile.

APPENDIX B.2.1-4

Appendix B.2 - Supporting Documentation for CFL Adjustments

Index

No.	Tab Name	Issue	Table Name
1	Correction of Misapplication	ISR	Correction to Installation Rate Parameter to Account for Misapplication of Percent of 2008 Sales Deferred To 2009
2	UES Sample	UES	Examples of Adjustments to CFL Unit Energy Savings Values
3	IMC	IMC	Adjustments to CFL Incremental Measure Cost
4	BulbCountAnalysis	Carryover	Calculation of Adjustments of CarryOver Bulbs

*Tab "DEER Interactive Effect 2011" contains DEER data used within UES Methodology

Table B.2.1 - Correction to Installation Rate Parameter to Account for Misapplication of Percent of 2008 Sales Deferred To 2009

Parameter Used In Calculation of Installation Rate	PG&E Understanding of Calculations Underlying ERT Data		PG&E Corrected Value for Scenario 7a, 7b	PG&E Corrected Value for Scenario 7a	PG&E Corrected Value for Scenario 7b	Source:
	Residential	Non-Residential	Residential	Non-Residential	Non-Res, w/ Burnout Adjustment	
Invoice/Appication Verification	0.961	0.961	0.961	0.961	0.961	ULP[(1)] Table 50, page 103
2006-2008 Shipments sold in 2006-2008	0.88	0.88	0.941	0.941	0.941	ULP Table 14, p.39
Leakage	0.9955	0.9955	0.9955	0.9955	0.9955	ULP Table 15, p.39
Final Adjusted Value	0.86	0.86				ULP Table 12, p.
ExPost Installation	0.67	0.73	0.67	0.73	0.8	ULP Table 26, p.57; burnout ULP Table 21, p.44
ERT EDIRate	**0.5762**	**0.6278**	**0.6032**	**0.6572**	**0.7202**	calculated as product of the above four factors
Original ERT EDIRate	*0.5738*	*0.6252*	*0.5738*	*0.6252*	*0.6252*	"Cadmus_PGE2000_ERT.txt" for residential "PGE2080.txt" for non-residential

Notes

1) KEMA, Inc., et. al. "Final Evaluation Report: Upstream Lighting Program Volume 1", February 8, 2010.

Table B.2.2 - Examples of Adjustments to CFL Unit Energy Savings Values

			IOU ex-ante values			ED ex-post values w/o interactive effects			ED ex-post values with interactive effects				Revised UES values w/o interactive effects			Revised UES values with interactive effects				
EDPrgID	EDPrgTrkClaimID	EDFilledPaidDate	EDFilledUESkW	EDFilledUESkWh	EDFilledUESTherms	EDUESkW	EDUESkWh	EDUESTherms	EDUESkWi	EDUESkWhi	EDUESThermsi	Year	EDUESkW	EDUESkWh	EDUESTherms	EDUESkWi	EDUESkWhi	EDUESThermsi	Building Type	Thermsi/kwh from Input Files
2006 Non-residential Claims Examples																				
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Warehouse	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.024688436	117.5846482	-0.969006776	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.860145607	Com_CFL_Warehouse	-0.008009346
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Utilities	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.467628846	Com_CFL_Utilities	-0.006319262
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_TCU	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.467628846	Com_CFL_TCU	-0.006319262
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Retail-Small(Ref:8,000ft	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.023891548	128.3416417	-0.644752164	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.237693001	Com_CFL_Retail-Small(Ref:8,000ft2)	-0.005329213
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Retail-SingleStoryLarge(	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.02399983	129.625271	-0.702456135	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.348463938	Com_CFL_Retail-SingleStoryLarge(Ref:130,(	-0.005806166
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Restaurant-SitDown	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.023031189	126.7444214	-0.80439156	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.544143409	Com_CFL_Restaurant-SitDown	-0.006648716
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Restaurant-FastFood	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.022800924	125.8793235	-0.84320681	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.618654772	Com_CFL_Restaurant-FastFood	-0.006969544
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_OtherIndustrial	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.022758736	127.6239773	-0.578285406	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.110100655	Com_CFL_OtherIndustrial	-0.004779831
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Office-Small(Ref:1,000ft	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.024158904	129.6010725	-0.417939527	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-0.802294054	Com_CFL_Office-Small(Ref:1,000ft2)	-0.003454488
PGE2080	PGE2080_3615_12-29-2006_Com_CFL_Lodging-Motel	12/29/2006	0.04216354	232.246866	0	0.01962442	120.9845004	0	0.023966893	128.1991699	-0.612357548	2006	0.04216354	232.246866	0	0.051017883	246.1816779	-1.175506952	Com_CFL_Lodging-Motel	-0.005061455
2007 Non-residential Claims Examples																				
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Warehouse	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.024688436	117.5846482	-0.969006776	2007	0.02757809	158.350959	0	0.033840931	162.5225549	-1.268287684	Com_CFL_Warehouse	-0.008009346
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Utilities	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2007	0.02757809	158.350959	0	0.033333329	167.5436481	-1.000661229	Com_CFL_Utilities	-0.006319262
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_TCU	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2007	0.02757809	158.350959	0	0.033333329	167.5436481	-1.000661229	Com_CFL_TCU	-0.006319262
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Retail-Small(Ref:8,000ft	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.023891548	128.3416417	-0.644752164	2007	0.02757809	158.350959	0	0.033442487	167.9010517	-0.843885976	Com_CFL_Retail-Small(Ref:8,000ft2)	-0.005329213
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Retail-SingleStoryLarge(	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.02399983	129.625271	-0.702456135	2007	0.02757809	158.350959	0	0.033496628	168.5428663	-0.919412007	Com_CFL_Retail-SingleStoryLarge(Ref:130,(	-0.005806166
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Restaurant-SitDown	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.023031189	126.7444214	-0.80439156	2007	0.02757809	158.350959	0	0.033012307	167.1024415	-1.052830521	Com_CFL_Restaurant-SitDown	-0.006648716
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Restaurant-FastFood	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.022800924	125.8793235	-0.84320681	2007	0.02757809	158.350959	0	0.032897175	166.6698926	-1.103633987	Com_CFL_Restaurant-FastFood	-0.006969544
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_OtherIndustrial	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.022758736	127.6239773	-0.578285406	2007	0.02757809	158.350959	0	0.032876081	167.5422195	-0.756890742	Com_CFL_OtherIndustrial	-0.004779831
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Office-Small(Ref:1,000ft	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.024158904	129.6010725	-0.417939527	2007	0.02757809	158.350959	0	0.033576165	168.5307671	-0.547021515	Com_CFL_Office-Small(Ref:1,000ft2)	-0.003454488
PGE2080	PGE2080_3653_03-29-2007_Com_CFL_Lodging-Motel	3/29/2007	0.035531757	195.7174166	0	0.01962442	120.9845004	0	0.023966893	128.1991699	-0.612357548	2007	0.02757809	158.350959	0	0.033480159	167.8298158	-0.801486176	Com_CFL_Lodging-Motel	-0.005061455
2008 Non-residential Claims Examples																				
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Warehouse	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.024688436	117.5846482	-0.969006776	2008	0.01962442	120.9845	0	0.024688436	117.5846482	-0.969006776	Com_CFL_Warehouse	-0.008009346
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Utilities	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2008	0.01962442	120.9845	0	0.023673232	127.6268345	-0.764532782	Com_CFL_Utilities	-0.006319262
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_TCU	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.023673232	127.6268345	-0.764532782	2008	0.01962442	120.9845	0	0.023673232	127.6268345	-0.764532782	Com_CFL_TCU	-0.006319262
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Retail-Small(Ref:8,000ft	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.023891548	128.3416417	-0.644752164	2008	0.01962442	120.9845	0	0.023891548	128.3416417	-0.644752164	Com_CFL_Retail-Small(Ref:8,000ft2)	-0.005329213
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Retail-SingleStoryLarge(	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.02399983	129.625271	-0.702456135	2008	0.01962442	120.9845	0	0.02399983	129.625271	-0.702456135	Com_CFL_Retail-SingleStoryLarge(Ref:130,(	-0.005806166
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Restaurant-SitDown	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.023031189	126.7444214	-0.80439156	2008	0.01962442	120.9845	0	0.023031189	126.7444214	-0.80439156	Com_CFL_Restaurant-SitDown	-0.006648716
PGE2080	PGE2080_3711_10-30-2008_Com_CFL_Restaurant-FastFood	10/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.022800924	125.8793235	-0.84320681	2008	0.01962442	120.9845	0	0.022800924	125.8793235	-0.84320681	Com_CFL_Restaurant-FastFood	-0.006969544
PGE2080	PGE2080_3711_09-30-2008_Com_CFL_OtherIndustrial	9/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.022758736	127.6239773	-0.578285406	2008	0.01962442	120.9845	0	0.022758736	127.6239773	-0.578285406	Com_CFL_OtherIndustrial	-0.004779831
PGE2080	PGE2080_3711_09-30-2008_Com_CFL_Office-Small(Ref:1,000ft	9/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.024158904	129.6010725	-0.417939527	2008	0.01962442	120.9845	0	0.024158904	129.6010725	-0.417939527	Com_CFL_Office-Small(Ref:1,000ft2)	-0.003454488
PGE2080	PGE2080_3711_09-30-2008_Com_CFL_Lodging-Motel	9/30/2008	0.06243448	343.9040131	0	0.01962442	120.9845004	0	0.023966893	128.1991699	-0.612357548	2008	0.01962442	120.9845	0	0.023966893	128.1991699	-0.612357548	Com_CFL_Lodging-Motel	-0.005061455
PGE2000	PGE2000_4429_02-07-2008_Res_CHANGE-A-LIGHT_All	2/7/2008	0.0034263	36.143	0	0.0034263	36.143	0	0.0034263	36.143	0	2008	0.0034263	36.143	0	0.0034263	36.143	0	Res	0
Residential Claims Examples																				
PGE2000	PGE2000_4367_08-25-2008_Res_CFL_All	8/25/2008	0.0013122	13.842	0	0.0028352	30.72205	0	0.003812589	30.681071	-0.658919535	2008	0.0028352	30.72205	0	0.003812589	30.681071	-0.658919535	Res	-0.021447772
PGE2000	PGE2000_4305_05-31-2007_Res_CFL_All	5/31/2007	0.0013122	13.842	0	0.0028352	30.72205	0	0.003812589	30.681071	-0.658919535	2007	0.0020737	22.282025	0	0.002778908	22.3999555	-0.4778998	Res	-0.021447772
PGE2000	PGE2000_4367_10-19-2006_Res_CFL_All	10/19/2006	0.0013122	13.842	0	0.0028352	30.72205	0	0.003812589	30.681071	-0.658919535	2006	0.0013122	13.842	0	0.001745226	14.11884	-0.296880065	Res	-0.021447772

Notes:
1) Highlighted columns AO through AT contain revised UES value calculated as described in methodology
2) No changes were made to Res_Change-A-Light_All rows
3) Lighting Measures Interactive Effects for kW and kWh Selected from DEER Interactive Effects Table

Table B.2.3 - Adjustments to CFL Incremental Measure Cost

	Non-Residential	Residential
NPV adjustment	($22.01)	($2.28)

Timing of Additional Unneeded Incandescent Bulb Replacements

Year		
1		
2	-6.57	
3	-6.57	-0.68
4	-6.57	
5	-6.57	-0.68
6		
7		-0.68
8		
9		-0.68

Assumptions:

Discount rate= 7.49% (from E3)

Costs taken from -- Revised DEER Measure Cost Summary (5/30/2008) Revised (6/2/2008).xls:
Incandescent cost is $0.68 (cell X61)
Labor cost is $5.89 (cell G44)
$6.57 nonresidential cost includes incandescent bulbs plus replacement labor cost;
$0.68 residential cost includes only incandescent bulb cost (no labor cost).

Includes four foregone incandescent bulb replacements in addition to initial replacement. We assumed 8,000 hours of CFL life, the shortest of the 8,000 - 12,000 hours bulbs invented. We also assumed 1,500 hours of life for an incandescent. This translates to more than 5 incandescents per CFL.

Notes:

1) NPV of values are added to existing measure costs within ERT input files

Table B.2.4 - Calculation of Adjustments of CarryOver Bulbs

From Caryover CFL Guidance for 2012 annual report

	06-08 claims adjusted for Leakage/verification	credit in 06-08 ERT	credit in 09 Decision	06-08 claims that remain for 10-12
Total	50,349,662	30,526,541	14,861,533	4,961,588
Residential	47,556,955	28,518,147	14,318,807	4,720,001
Non-residential	2,792,706	2,008,393	542,726	241,587

PG&E Carryover Calculation Adjustments

	Claims Adjusted for leakage / Verification*	PG&E Scenario 7b Credit in 06-08 ERT**	Credit in 09 Decision	Adjusted 06-08 Claims that remain for 10-12
Total	50,331,961	32,163,789	14,861,533	3,306,639
Residential	46,808,724	29,511,496	14,318,807	2,978,421
non-residential	3,523,237	2,652,293	542,726	328,218

* Includes PG&E's Adjustments of the split of bulbs between residential and non-residential facilities to a 93% / 7% split.

** Includes PG&E's adjustment of the residential / non-residential split as well as the correction of the 06-08 installed bulbs Adjustment Factor and the adjustment to the number of bulbs considered to have burned out.

Lighting Measures Interactive Effects

1

1

0

2

CFL Lamp Energy Impacts for: Pacific Gas & Electric

Location: CZ06, Building Vintage: Ex

Measure Type	Building Type	Building Vintage	Lighting EFLH	Lighting Coincident Demand	Energy Impacts per ΔWatt Lighting			
					Direct (End-Use)		Whole Buildi	
					kWh/ΔW	Watt/ΔW	kWh/ΔW	Watt/ΔW
CFL	Asm	Ex	2300	0.41	2.30	0.41	2.41	0.48
CFL	EPr	Ex	2240	0.04	2.24	0.04	2.41	0.04
CFL	ESe	Ex	2330	0.04	2.33	0.04	2.50	0.05
CFL	ECC	Ex	2420	0.39	2.42	0.39	2.67	0.49
CFL	EUn	Ex	2370	0.41	2.37	0.41	2.64	0.50
CFL	ERC	Ex	2600	0.04	2.60	0.04	2.68	0.05
CFL	Gro	Ex	3890	0.50	3.89	0.50	3.59	0.64
CFL	Hsp	Ex	4200	0.72	4.20	0.72	4.67	0.88
CFL	Nrs	Ex	3570	0.57	3.57	0.57	3.80	0.71
CFL	Htl	Ex	1670	0.20	1.67	0.20	1.74	0.25
CFL	Mtl	Ex	1370	0.15	1.37	0.15	1.45	0.18
CFL	MBT	Ex	3090	0.78	3.09	0.78	3.47	0.94
CFL	MLI	Ex	2580	0.78	2.58	0.78	2.72	0.90
CFL	OfL	Ex	3000	0.63	3.00	0.63	3.34	0.84
CFL	OfS	Ex	2980	0.68	2.98	0.68	3.19	0.83
CFL	RSD	Ex	4830	0.80	4.83	0.80	5.06	0.94
CFL	RFF	Ex	4810	0.81	4.81	0.81	5.00	0.94
CFL	Rt3	Ex	3710	0.63	3.71	0.63	3.99	0.77
CFL	RtL	Ex	4350	0.69	4.35	0.69	4.66	0.84
CFL	RtS	Ex	4010	0.70	4.01	0.70	4.26	0.85
CFL	SCn	Ex	2760	0.58	2.76	0.58	2.69	0.72
CFL	SUn	Ex	2760	0.58	2.76	0.58	2.76	0.58
CFL	WRf	Ex	4730	0.55	4.73	0.55	6.70	0.68
CFL	Com	Ex	3040	0.54	3.04	0.54	3.23	0.65
CFL	SFm	Ex	541	0.04	0.54	0.04	0.56	0.06
CFL	MFm	Ex	541	0.04	0.54	0.04	0.53	0.05
CFL	DMo	Ex	541	0.04	0.54	0.04	0.60	0.07
CFL	Res	Ex	541	0.04	0.54	0.04	0.55	0.06

Notes:

CZ03

ng	HVAC Factors		
	Energy	Demand	Gas
kBTU/ΔW	kWh/kWh	kW/kW	therm/kWh
-2.03	1.05	1.17	-0.0088
-2.01	1.08	1.1	-0.009
-2.48	1.07	1.1	-0.011
-2.64	1.1	1.27	-0.011
-1.80	1.11	1.22	-0.0076
-2.52	1.03	1.16	-0.0097
-5.12	0.92	1.29	-0.013
-2.70	1.11	1.22	-0.0064
-4.28	1.06	1.26	-0.012
-0.83	1.04	1.25	-0.005
-0.69	1.06	1.22	-0.0051
-0.16	1.12	1.2	-0.00052
-1.23	1.05	1.16	-0.0048
-1.89	1.11	1.34	-0.0063
-1.03	1.07	1.23	-0.0035
-3.21	1.05	1.17	-0.0067
-3.36	1.04	1.16	-0.007
-2.19	1.07	1.22	-0.0059
-2.53	1.07	1.22	-0.0058
-2.14	1.06	1.22	-0.0053
-2.21	0.97	1.26	-0.008
0.00	1	1	0
-0.01	1.42	1.24	0
-1.84	**1.06**	**1.21**	-0.0061
-1.44	1.03	1.36	-0.027
-1.13	0.99	1.21	-0.021
-1.16	1.12	1.66	-0.021
-1.34	**1.02**	**1.33**	-0.0250

1. Source Link: http://www.deeresources.com/index.php/deer-versions/deer2011-for-13-14
2. Used in calculation of UES

3	
10.71	
7.71	

APPENDIX B.2.5

State of California

Memorandum

Date: May 16, 2013

To: California Investor Owned Utilities: Pacific Gas and Electric Company, Southern California Edison, San Diego Gas & Electric.

File No: R.09-11-014

Subject: Energy Division Guidance Regarding How to Report Upstream CFL Savings including Reporting of Carry Over from Program Years 2006-2009, and 2010-2012 Installation Rates.

Energy Division provides the following as guidance for the Investor Owned Utilities (IOUs) to follow when submitting 2012 Annual Reports for the 2010-2012 EE program cycle. This memo clarifies installation rates that may be used by IOU for the 2010-2012 claims, approved bulb counts and savings estimates for 2006-2009 stored CFLs.

For 2010-2012 upstream lighting program bulb claims:

- The IOUs are directed to use the installation rates already in their savings claims.
- All savings parameters (UES, NTG, EUL) must be reported consistent with DEER 10-12.

Energy Division staff developed estimates of the remaining bulbs available to be credited based on the 2006-2008 and 2009 claims. The estimate is based on the full 2006-2009 claims minus installations of stored bulbs already credited in the 2006-2008 final RIMM true-up authorized by D.11-12-036 and the 2009 RRIM payment authorized by D.11-12-036 as modified by D.11-12-062. The table below summarizes the 2006-2009 carryover CFL claim allowed for the 2010-2012 annual report to Energy Division.

Table 1: Summary of 2006-2009 Bulbs Eligible to be Claimed in 2010-2012 and Approved Savings Parameters

IOU	Sector	Description	Count	*Approved Savings Parameters Based on 2010-2012 DEER* kWh/lamp	kW/lamp	Therm/lamp	NTG	EUL
PG&E	res	06-08 ULP CFLs	4,720,001	37.36	0.0050	-1.045	0.6	6.57
PG&E	non-res	06-08 ULP CFLs	241,587	146.53	0.0307	-0.873	0.6	3.31
PG&E	res	09 ULP CFLs	10,406,255	36.82	0.0049	-1.030	0.6	6.57
PG&E	non-res	09 ULP CFLs	136,757	146.39	0.0306	-0.872	0.6	3.31
SCE	res	06-08 ULP CFLs	1,343,561	45.22	0.0062	-0.967	0.6	6.57
SCE	non-res	06-08 ULP CFLs	86,059	157.94	0.0335	-0.524	0.6	3.27
SCE	res	09 ULP CFLs	7,974,668	38.89	0.0053	-0.832	0.6	6.57
SCE	non-res	09 ULP CFLs	38,955	157.95	0.0335	-0.524	0.6	3.27
SDG&E	res	06-08 ULP CFLs	211,529	39.15	0.0049	-0.783	0.6	6.57
SDG&E	non-res	06-08 ULP CFLs	14,672	138.83	0.0296	-0.392	0.6	3.28
SDG&E	res	09 ULP CFLs	1,360,473	33.04	0.0041	-0.661	0.6	6.57
SDG&E	non-res	09 ULP CFLs	3,220	138.83	0.0296	-0.392	0.6	3.28

The Energy Division developed estimates of the remaining bulbs available to be credited based on the 2006-2008 and 2009 claims that are eligible to claim as installations reduced by those installations already credited via the 2006-2008 final RIMM true-up authorized by D.11-12-036 and the 2009 RRIM payment authorized by D.11-12-036 as modified by D.11-12-062. The table below summarizes the 2006-2009 carryover CFL claim allowed.

The savings claims for the 2006-2009 deferred bulbs must use the 2010-2012 DEER estimates for Unit Energy Savings, Effective Useful Life, and Net-to-Gross as listed in the above table. IOUs must utilize the Residential/Non Residential split as listed in the above table for these claims.

The embedded spreadsheet, below, contains both the above table and the supporting details of the estimates for the bulb counts, UES and EUL values to be used for these claims:

10-12 CFL analysis
06-09 ULP CarryOver (

The supporting details which document the 2006-2008 and 2009 CFL bulbs credited in D.10-12-049 for 2006-2008, D.11-12-036 and D.11-12-062 for 2009 are contained in the spreadsheet embedded below:

Compare2009UPLcfl_
ERT-Expected_FinalVe

Energy Division recognizes that the installation rates that are in the IOUs 2010-2012 claims may be not be a true reflection of new information that is emerging on saturation levels and changes of those levels for bulbs installed during the 2010-2012 program period. This information will be reviewed further in the context of the evaluation work and will inform recommendations for lighting savings claims in the future.

APPENDIX B.3.1-3

Index

Tab
Custom Project ERTAdjustments
Net SavingsAdjustments
Gross Savings Adjustments

Tables

Table B.3.1 - Custom Project Additions to ERT
Table B.3.2 - Net Savings Impact of Net-to-Gross Adjustments Following Review of 306 Custom Project Net-to-Gro
Table B.3.3 - Gross Savings Impact of Adjustments Following Review of 27 Custom Project Evaluations

ss Evaluations

Table B.3.1 - Custom Project Additions to ERT

Program	Climate Zone	UESkw	UESkwh	UESTherms	EUL	NTG
PGE2042	12	769	7,000,859	1,121,936	20	1
PGE2058	14	769	7,000,859	1,121,936	20	1
PGE2004	3	1,539	14,001,719	2,243,873	20	1
Sub-total		3,078	28,003,438	4,487,746		
PGE2004	4	-	-	9,128,462	20	0.3
Total		3,078	28,003,438	13,616,208		

Table B.3.2 - Net Savings Impact of Net-to-Gross Adjustments Following Review of 306 Custom Project Net-to-Gross Evaluations
Data Sources: 2006-2008 Fabrication, Process and Manufacturing Report ("FAB") Tables 4-1, 4-2, Appendices C.3 & D (Final Site Reports) by Itron Dated Feb 3, 2010

Final Site Report (FSRs) & Tables 4.1 & 4.2 FAB Report										Evaluator (Itron) Final Results			PG&E Calculations							Evaluator (Itron Final Results)			PG&E Calculations			Evaluator (Itron) Final Results			PG&E Calculations					
Details of PG&E Site or Application ID				PG&E Ex-Ante Savings Claim						Evaluated Ex-Post Gross Savings Estimate			Calculated Gross Savings Loss			PG&E Gross Savings Adjustments			PG&E Final Gross Ex-Post Savings Estimate			Evaluation Ex-Post NTGR Value			PG&E Adjusted NTGR Value			Evaluator Ex-Post Net Savings			PG&E Ex-Post Net Savings			Difference in Net Ex-Post Savings		
Site ID	APPLICATION_CODE	Fuel Sampled	PG&E gross is pass thru	GROSS KW	GROSS KWH	GROSS THM	NET KW	NET KWH	NET THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm
A	B	C	D	E	F	G	H	I	J	K	L	M	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN
B001	2K6-L0204E	Electric	no	394	3,902,824	-			-	219	2,209,538	-	(175)	(1,693,286)	-				219	2,209,538	-	0.62	0.62		0.81	0.81		136	1,360,914	-	178	1,797,091	-	42	427,177	-
B002	2K6-L0196E	Electric	no	370	3,819,518	-				206	2,162,376	-	(164)	(1,657,142)	-				206	2,162,376	-	0.62	0.62		0.81	0.81		128	1,340,673	-	168	1,758,732	-	40	418,059	-
B003	2K6-L0210E	Electric	no	333	3,327,156	-				185	1,883,631	-	(148)	(1,443,525)	-				185	1,883,631	-	0.62	0.62		0.81	0.81		115	1,167,851	-	150	1,532,020	-	36	364,169	-
B004	2K6-L0205E	Electric	no	248	2,369,046	-				138	1,341,208	-	(110)	(1,027,838)	-				138	1,341,208	-	0.62	0.62		0.81	0.81		86	831,549	-	112	1,090,849	-	27	259,300	-
B005	2K6-S0214E	Electric	no	201	2,211,749					101	1,110,298	-	(100)	(1,101,451)	-				101	1,110,298	-	0.62	0.62		0.81	0.81		63	688,385	-	82	903,042	-	20	214,658	-
B006	2K6-L0522E	Electric	no	202	2,131,152	-				156	1,369,488	-	(46)	(761,664)	-				156	1,369,488	-							-	-	-	-	-	-	-	-	-
B007	2K6-S0215E	Electric	no	203	2,101,575					102	1,054,991	-	(101)	(1,046,584)	-				102	1,054,991	-	0.62	0.62		0.81	0.81		63	654,094	-	83	858,059	-	20	203,965	-
B008	2K6-L0202E	Electric	no	212	2,003,552	-				118	1,134,287	-	(94)	(869,265)	-				118	1,134,287	-	0.62	0.62		0.81	0.81		73	703,258	-	96	922,553	-	23	219,295	-
B009	2K6-S0212E	Electric	no	182	1,921,175					92	964,430		(90)	(956,745)	-				92	964,430	-	0.62	0.62		0.81	0.81		57	597,947	-	75	784,403	-	18	186,456	-
B010	2K6-L0203E	Electric	no	173	1,741,438	-				96	985,895	-	(77)	(755,543)	-				96	985,895	-	0.62	0.62		0.81	0.81		60	611,255	-	78	801,861	-	19	190,606	-
B011	2K6-L0216E	Electric	no	154	1,618,033	-				72	749,709	-	(82)	(868,324)	-				72	749,709	-	0.62	0.62		0.81	0.81		45	464,820	-	59	609,763	-	14	144,944	-
B012	2K6-L0010E	Electric	no	27	504,570	-				27	504,570	-	-	-	-				27	504,570	-							-	-	-	-	-	-	-	-	-
B013	2K6-L0443E	Electric	no		923,551	-				(14)	1,332,681	-	(14)	409,130	-				(14)	1,332,681	-							-	-	-	-	-	-	-	-	-
B014	2K6-L0308E	Electric	no	85	620,707	-				56	489,596	-	(29)	(131,111)	-				56	489,596	-							-	-	-	-	-	-	-	-	-
B015	2K6-L0235E	Electric	no	116	557,213	-				118	591,497	-	2	34,284	-				118	591,497	-	0.68	0.68		0.78	0.78		80	402,218	-	92	463,339	-	12	61,121	-
B016	2K6-S0211E	Electric	no	134	1,340,656					56	559,053		(78)	(781,603)	-				56	559,053	-	0.62	0.62		0.81	0.81		35	346,613	-	46	454,696	-	11	108,084	-
B017	2K6-L0290E	Electric	no	73	630,747	-				19	126,187	-	(54)	(504,560)	-				19	126,187	-	0.70	0.70		0.70	0.70		13	88,331	-	13	88,331	-	-	-	-
B018	NC0045069	Electric	no	106	928,106					59	525,436		(47)	(402,670)	-				59	525,436	-	0.62	0.62		0.81	0.81		37	325,770	-	48	427,355	-	11	101,584	-
B019	NC0044109	Electric	no	17	152,008					10	90,199		(7)	(61,809)	-				10	90,199	-	0.60	0.60		0.60	0.60		6	54,119	-	6	54,119	-	-	-	-
B020	2K6-L0306E	Electric	no	30	233,773	-				17	119,483	-	(13)	(114,290)	-				17	119,483	-	0.68	0.68		0.81	0.81		12	81,248	-	14	97,180	-	2	15,931	-
B021	2K6-L0152E	Electric	no	68	251,328	-				96	298,344	-	28	47,016	-				96	298,344	-							-	-	-	-	-	-	-	-	-
B022	NC0052813	Electric	no	30	248,021					13	117,015		(17)	(131,006)	-				13	117,015	-	0.60	0.60		0.60	0.60		8	70,209	-	8	70,209	-	-	-	-
B023a	2K6-S0213E	Electric	no	145	1,502,391					73	754,200		(72)	(748,191)	-				73	754,200	-	0.62	0.62		0.81	0.81		45	467,604	-	59	613,416	-	14	145,812	-
B024a	2K6-L0762E	Electric	no	857	7,456,038	-				774	5,869,628	-	(83)	(1,586,410)	-				774	5,869,628	-	0.70	0.70		0.70	0.70		542	4,108,740	-	542	4,108,740	-	-	-	-
B025	NC0054415	Electric	no	2	17,580	-				-	-	-	(2)	(17,580)	-				-	-	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B026a	NC0050053	Electric	no	754	6,612,695					149	1,308,333		(605)	(5,304,362)	-	520	4,551,667		669	5,860,000	-	0.69	0.69		0.69	0.69		103	902,750	-	462	4,043,400	-	359	3,140,650	-
B027	NC0049256	Electric	no	2	17,580					-	-		(2)	(17,580)	-				-	-	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B028	NC0051917	Electric	no	8	65,925					5	45,534		(3)	(20,391)	-				5	45,534	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B029	NC0050920	Electric	no	8	65,925					5	42,452		(3)	(23,473)	-				5	42,452	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B030	NC0060217	Electric	no	6	52,740	-				6	48,784	-	-	(3,956)	-				6	48,784	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B031	NC0056653	Gas	no	-	-	1,264,741				-	-	1,269,988	-	-	5,247				-	-	1,269,988			0.40			0.53	-	-	507,995	-	-	673,094	-	-	165,098
B033	2K6-L0633G	Gas	no	-	-	754,518				-	-	585,092	-	-	(169,426)				-	-	585,092			0.83			0.83	-	-	485,626	-	-	485,626	-	-	-
B034	2K6-L0830G	Gas	no	-	-	624,204				-	-	972,726	-	-	348,522				-	-	972,726							-	-	-	-	-	-	-	-	-
B035	NC0043970	Gas	no	-	-	530,950				-	-	2,065,336	-	-	1,534,386				-	-	2,065,336			0.40			0.53	-	-	826,134	-	-	1,094,628	-	-	268,494
B036a	2K6-L0349E	Electric	no	384	3,741,621	-				389	3,499,715	-	5	(241,906)	-				389	3,499,715	-	0.61	0.61		0.61	0.61		237	2,146,492	-	237	2,146,492	-	-	-	-
B037	2K6-L0641G	Gas	no	-	-	477,292				-	-	497,747	-	-	20,455				-	-	497,747							-	-	-	-	-	-	-	-	-
B038	NC0054093	Gas	no	-	-	260,000				-	-	-	-	-	(260,000)				-	-	-	0.22	0.22	0.22	0.44	0.44	0.44	-	-	-	-	-	-	-	-	-
B039	2K6-L0308G	Gas	no	-	-	132,699				-	-	137,605	-	-	4,906				-	-	137,605							-	-	-	-	-	-	-	-	-
B040	2K6-L0757G	Gas	no	-	-	198,494				-	-	182,565	-	-	(15,929)				-	-	182,565							-	-	-	-	-	-	-	-	-
B041a	2K07000155	Gas	no			4,919,708				-	-		-	-	(4,919,708)			4,919,708	-	-	4,919,708			0.04			0.23	-	-	-	-	-	1,147,915	-	-	1,147,915
B042	2K6-L0010G	Gas	no	-	-	56,939				-	-	56,935	-	-	(4)				-	-	56,935			0.87			0.87	-	-	49,533	-	-	49,533	-	-	-
B042a	2K6-L0443G	Gas	no	-	-	33,489				-	-	24,036	-	-	(9,453)				-	-	24,036							-	-	-	-	-	-	-	-	-
B043	2K6-L0754G	Gas	no	-	-	4,063,495				-	-	250,452	-	-	(3,813,043)				-	-	250,452							-	-	-	-	-	-	-	-	-
B044	TCA0001250	Electric	no	89	917,813	-				43	444,588	-	(46)	(473,225)	-				43	444,588	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B046	TCA0001250	Electric	no	358	3,696,381	-				173	1,790,525	-	(185)	(1,905,856)	-	82	476,988		255	2,267,513	-	1.00	1.00		1.00	1.00		173	1,790,525	-	255	2,267,513	-	82	476,988	-
B047	TCA0001250	Electric	no	321	3,238,915	-				155	1,568,929	-	(166)	(1,669,986)	-				155	1,568,929	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B048a	TAA0001639	Electric	no	904	5,032,246	-				842	4,782,240	-	(62)	(250,006)	-				842	4,782,240	-	0.81	0.81		0.81	0.81		682	3,873,614	-	682	3,873,614	-	-	-	-
B048b	TAA0001789	Electric	no	-	42,731	-				-	50,849	-	-	8,118	-				-	50,849	-	0.81	0.81		0.81	0.81		-	41,188	-	-	41,188	-	-	-	-
B048c	TAA0001789	Electric	no	147	802,090	-				144	770,394	-	(3)	(31,696)	-				144	770,394	-	0.81	0.81		0.81	0.81		117	624,019	-	117	624,019	-	-	-	-
B049	TAA0001789	Electric	no	-	415,741	-				-	-	-	-	(415,741)	-				-	-	-	0.87	0.87		0.87	0.87		-	-	-	-	-	-	-	-	-
B050	TAA0001789	Electric	no	32	1,505,214	-				-	-	-	(32)	(1,505,214)	-				-	-	-	0.87	0.87		0.87	0.87		-	-	-	-	-	-	-	-	-
B052	TAA0001758	Electric	no	83	728,232	-				86	698,289	-	3	(29,943)	-				86	698,289	-	0.25	0.25		0.50	0.50		22	174,572	-	43	349,145	-	22	174,572	-
B053	TAA0001758	Electric	no	119	1,040,375	-				131	872,603	-	12	(167,772)	-				131	872,603	-	0.70	0.70		0.70	0.70		92	613,731	-	92	613,731	-	-	-	-
B055	TBA0001717	Electric	no	355	3,015,908	-				-	-	-	(355)	(3,015,908)	-	355	3,015,908		355	3,015,908	-	0.90	0.90		0.90	0.90		-		-	320	2,714,317	-	320	2,714,317	-
B056	TBA0001717	Electric	no	22	185,549	-				21.8	185,549	-	(0)	-	-				22	185,549	-	0.87	0.87		0.87	0.87		19	160,809	-	19	160,809	-	-	-	-
B057	TAA0001771	Electric	no	141	1,237,788	-				(23)	(227,194)	-	(164)	(1,464,982)	-				(23)	(227,194)	-							-	-	-	-	-	-	-	-	-
B058	TAA0001771	Electric	no	63	424,620	-				44	390,235	-	(19)	(34,385)	-				44	390,235	-							-	-	-	-	-	-	-	-	-
B061	TAA0001766	Gas	no	-	-	65,922				-	-	73,318	-	-	7,396				-	-	73,318			0.61			0.61	-	-	44,724	-	-	44,724	-	-	-
B062	2K08007843	Electric	no		406,443	-				-	198,510	-	-	(207,933)	-				-	198,510	-	0.69	0.69		0.69	0.69		-	136,972	-	-	136,972	-	-	-	-
B063	NC0021889	Electric	no	394	3,451,202					(1,107)	(5,563,434)	9,128,462	(1,501)	(9,014,636)	9,128,462	1,501	9,014,636	9,128,462	394	3,451,202	9,128,462	0.30	0.30	0.30	0.30	0.30	0.30	(332)	(1,669,030)	2,738,539	118	1,035,361	2,738,539	450	2,704,391	-
B064	NC0065636	Electric	no	349	2,722,524	-				349	2,722,524	-	-	-	-				349	2,722,524	-	0.25	0.25		0.50	0.50		87	680,631	-	175	1,361,262	-	87	680,631	-
B065	2K6-L0208E	Electric	no	240	2,299,921					134	1,302,073	-	(106)	(997,848)	-				134	1,302,073	-							-	-	-	-	-	-	-	-	-
B066	NC0046290	Electric	no	219	2,193,879					145	1,265,432		(74)	(928,447)	-				145	1,265,432	-	0.10	0.10		0.40	0.40		15	126,543	-	58	506,173	-	44	379,630	-
B067	NC0051153	Electric	no	262	2,036,807					211	1,589,275		(51)	(447,532)	-				211	1,589,275	-	0.70	0.70		0.70	0.70		148	1,112,493	-	148	1,112,493	-	-	-	-
B068	2K6-L0195E	Electric	no	198	2,010,736	-				110	1,138,355	-	(88)	(872,381)	-				110	1,138,355	-	0.62	0.62		0.81	0.81		68	705,780	-	89	925,862	-	21	220,082	-
B069	2K07000602	Electric	no	263	1,707,423	-				116	513,026	0	(147)	(1,194,397)	-				116	513,026	0	0.57	0.57		0.57	0.57		66	292,425	-	66	292,425	-	-	-	-
B070a	TAA0001341	Electric	no	112	975,873	-				109	938,945	-	(3)	(36,928)	-				109	938,945	-	0.93	0.93		0.93	0.93		101	873,219	-	101	873,219	-	-	-	-
B071	NC0058114	Electric	no	77	674,256	-				68	595,333	-	(9)	(78,923)	-				68	595,333	-	0.90	0.90		0.90	0.90		61	535,800	-	61	535,800	-	-	-	-
B072	2K07000363	Electric	no	86	626,641	-				2	25,301	-	(84)	(601,340)	-				2	25,301	-	0.80	0.80		0.80	0.80		2	20,241	-	2	20,241	-	-	-	-
B073	NC0052113	Electric	no	73	618,418	-	69	581,313	-	6	54,869	-	(67)	(563,549)	-				6	54,869	-	0.90	0.90		0.90	0.90		6	49,382	-	6	49,382	-	-	-	-
B074	NC0057254	Electric	no	60	527,397	-				34	298,580	-	(26)	(228,817)	-				34	298,580	-	0.62	0.62		0.81	0.81		21	185,120	-	28	242,845	-	7	57,725	-
B075	NC0061813	Electric	no	60	523,973	-				46	399,920	-	(14)	(124,053)	-				46	399,920	-	0.60	0.60		0.60	0.60		28	239,952	-	28	239,952	-	-	-	-
B076	2K6-L0690E	Electric	no	210	444,093	-				5	23,800	-	(205)	(420,293)	-				5	23,800	-	0.93	0.93		0.93	0.93		5	22,213	-	5	22,213	-	-	-	-
B077	2K6-L0461E	Electric	no	50	334,668	-				2	14,815	-	(48)	(319,853)	-				2	14,815	-	0.79	0.79		0.79	0.79		2	11,753	-	2	11,753	-	-	-	-
B078	2K07000364	Electric	no	40	289,219	-				12	92,578	-	(28)	(196,641)	-				12	92,578	-	0.70	0.70		0.70	0.70		8	64,805	-	8	64,805	-	-	-	-
B079	2K6-L0465E	Electric	no	33	282,799	-				36	309,443	-	3	26,644	-				36	309,443	-							-	-	-	-	-	-	-	-	-
B080	NC0059813	Electric	no	35	208,479	-				(1)	(4,225)	-	(36)	(212,704)	-				(1)	(4,225)	-							-	-	-	-	-	-	-	-	-
B081	2K6-L0572E	Electric	no	75	188,580	-				9	74,921	-	(66)	(113,659)	-				9	74,921	-	0.70	0.70		0.70	0.70		6	52,445	-	6	52,445	-	-	-	-
B082	2K6-L0828E	Electric	no	9	77,070	-				14	91,380	-	5	14,310	-				14	91,380	-	0.90	0.90		0.90	0.90		13	82,242	-	13	82,242	-	-	-	-
B083	NC0061421	Electric	no	8	65,925	-				-	-	-	(8)	(65,925)	-				-	-	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B084	NC0060256	Electric	no	2	17,580	-				1	4,277	-	(1)	(13,303)	-				1	4,277	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B085	NC0060273	Electric	no	2	17,580	-				-	-	-	(2)	(17,580)	-				-	-	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B086	NC0058597	Electric	no	2	17,580	-				1	5,993	-	(1)	(11,587)	-				1	5,993	-	-	-		-	-		-	-	-	-	-	-	-	-	-
B087	NC0042109	Electric	no	2	14,362					-	2,415	-	(2)	(11,947)	-				-	2,415	-	0.47	0.47	0.47	0.47	0.47	0.47	-	1,135	-	-	1,135	-	-	-	-	-
B088	2K6-L0268E	Electric	no	354	2,877,912	-				328	2,709,637	-	(26)	(168,275)	-				328	2,709,637	-	0.89	0.89	0.89	0.89	0.89	0.89	292	2,411,577	-	292	2,411,577	-	-	-	-	-
B089	NC0053434	Electric	no	308	2,699,832					454	3,974,712		146	1,274,880	-				454	3,974,712	-	0.23	0.23	0.23	0.23	0.23	0.23	104	914,184	-	104	914,184	-	-	-	-	-
B090	2K6-L0391E	Electric	no	532	1,212,803	-				-	-	-	(532)	(1,212,803)	-				-	-	-	0.59	0.59	0.59	0.59	0.59	0.59	-	-	-	-	-	-	-	-	-
B091a	TBA0001525	Electric	no	163	1,807,356	-				163	1,799,671	-	-	(7,685)	-				163	1,799,671	-	0.83	0.83	0.83	0.83	0.83	0.83	136	1,499,725	-	136	1,499,725	-	-	-	-	-
B092	NC0046973	Electric	no	45	628,455					15	129,391		(30)	(499,064)	-				15	129,391								-	-	-	-	-	-	-	-	-
B093	2K6-L0261G	Gas	no	-	-	2,223,159				-	-	406,649	-	-	(1,816,510)			1,816,510	-	-	2,223,159			0.05			0.10	-	-	-	-	-	222,316	-	-	222,316
B094	NC0062033	Gas	no	-	-	1,037,385				-	-	1,292,229	-	-	254,844				-	-	1,292,229			0.40			0.53	-	-	516,892	-	-	689,189	-	-	172,297
B095	TAA0001789	Electric	no	3,452	14,966,829	-				-	(30,324)	-	(3,452)	(14,997,153)	-	1,571	14,737,285		1,571	14,706,961	-	0.15	0.15	0.15	0.30	0.30	0.30	-	(4,549)	-	471	4,412,088	-	471	4,416,637	-	-
B096	TAA0001758	Electric	no	436	4,782,886	-				-	-	-	(436)	(4,782,886)	-	436	4,782,886		436	4,782,886	-	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	436	4,782,886	-	436	4,782,886	-	-
B097	2K07000022	Electric	no	1,002	10,096,226	-				480	4,814,890	-	(522)	(5,281,336)	-	81	813,716		561	5,628,606	-	0.62	0.62		0.81	0.81		298	2,985,232	-	456	4,577,933	-	158	1,592,701	-
B098	2K6-S0456E	Electric	no	237	2,471,624					114	1,178,717	-	(123)	(1,292,907)	-				114	1,178,717	-	0.62	0.62		0.81	0.81		71	730,805	-	93	958,690	-	22	227,885	-
B099	2K6-S0457E	Electric	no	325	3,110,328					156	1,483,315	-	(169)	(1,627,013)	-				156	1,483,315	-	0.62	0.62		0.81	0.81		97	919,655	-	127	1,206,430	-	30	286,774	-
B100	CI0000066	Electric	no	347	2,979,032					113	817,053	-	(234)	(2,161,979)	-	5	40,672		118	857,725	-	0.28	0.28		0.28	0.28		32	228,775	-	33	240,163	-	2	11,388	-
B101	2K08006373	Electric	no	-	4,136,817	-				-	130,370	-	-	(4,006,447)	-				-	130,370	-	0.87	0.87		0.87	0.87		-	112,987	-	-	112,987	-	-	-	-
B102a	TAA0001098	Electric	no	614	5,377,755	-				105	918,963	-	(509)	(4,458,792)	-				105	918,963	-	0.90	0.90		0.90	0.90		94	827,067	-	94	827,067	-	-	-	-
B103	2K6-L0269E	Electric	no	406	2,751,685	-				120	1,049,331	-	(286)	(1,702,354)	-				120	1,049,331	-	0.87	0.87		0.87	0.87		104	912,918	-	104	912,918	-	-	-	-
B104	NC0057214	Electric	no	283	2,483,163	-				157	1,405,814	-	(126)	(1,077,349)	-				157	1,405,814	-	0.62	0.62		0.81	0.81		97	871,605	-	128	1,143,395	-	30	271,791	-
B105	NC0053293	Electric	no	447	3,025,212					-	3,025,212		(447)	-	-				-	3,025,212	-	0.15	0.15		0.43	0.43		-	453,782	-	-	1,310,824	-	-	857,043	-
B106	TCA0001784	Electric	no	83	2,474,928	-				85	748,613	-	2	(1,726,315)	-				85	748,613	-	0.40	0.40		0.40	0.40		34	299,445	-	34	299,445	-	-	-	-
B107	TBA0000481	Electric	no	101	943,435	-				83	786,883	-	(18)	(156,552)	-				83	786,883	-	0.90	0.90		0.90	0.90		75	708,195	-	75	708,195	-	-	-	-
B108	TCA0001175	Electric	no	57	626,641	-				19	171,868	-	(38)	(454,773)	-				19	171,868	-	0.28	0.28		0.28	0.28		5	48,123	-	5	48,123	-	-	-	-
B109	TCA0001784	Electric	no	64	646,483	-				12	100,157	-	(52)	(546,326)	-				12	100,157	-	0.65	0.65		0.65	0.65		8	65,102	-	8	65,102	-	-	-	-
B110	TAA0001093	Electric	no	105	908,564	-				130	1,391,805	-	25	483,241	-				130	1,391,805	-	0.87	0.87		0.87	0.87		113	1,210,870	-	113	1,210,870	-	-	-	-
B111	TCA0000258	Electric	no	157	1,344,741	-				231	2,019,566	-	74	674,825	-				231	2,019,566	-	0.30	0.30		0.30	0.30		69	605,870	-	69	605,870	-	-	-	-
B111a	TCA0000893	Electric	no	63	596,509	-				21	180,053	-	(42)	(416,456)	-				21	180,053	-	0.93	0.93		0.93	0.93		20	167,449	-	20	167,449	-	-	-	-
B112	TCA0001175	Electric	no	85	873,171	-				28	239,483	-	(57)	(633,688)	-				28	239,483	-	0.28	0.28		0.28	0.28		8	67,055	-	8	67,055	-	-	-	-
B113	TAA0001259	Electric	no	124	1,088,430	-				105	921,990	-	(19)	(166,440)	-				105	921,990	-							-	-	-	-	-	-	-	-	-

Table B.3.2 - Net Savings Impact of Net-to-Gross Adjustments Following Review of 306 Custom Project Net-to-Gross Evaluations
Data Sources: 2006-2008 Fabrication, Process and Manufacturing Report ("FAB") Tables 4-1, 4-2, Appendices C.3 & D (Final Site Reports) by Itron Dated Feb 3, 2010

Final Site Report (FSRs) & Tables 4.1 & 4.2 FAB Report									Evaluator (Itron) Final Results			PG&E Calculations									Evaluator (Itron Final Results)			PG&E Calculations			Evaluator (Itron) Final Results			PG&E Calculations					
Details of PG&E Site or Application ID				PG&E Ex-Ante Savings Claim						Evaluated Ex-Post Gross Savings Estimate			Calculated Gross Savings Loss			PG&E Gross Savings Adjustments			PG&E Final Gross Ex-Post Savings Estimate			Evaluation Ex-Post NTGR Value			PG&E Adjusted NTGR Value			Evaluator Ex-Post Net Savings			PG&E Ex-Post Net Savings			Difference in Net Ex-Post Savings		
Site ID	APPLICATION_CODE	Fuel Sampled	PG&E gross is pass thru	GROSS KW	GROSS KWH	GROSS THM	NET KW	NET KWH	NET THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm
B114	TBA0000304	Electric	no	111	952,115	-				131	1,124,410	-	20	172,295	-				131	1,124,410	-	0.40	0.40		0.40	0.40		52	449,764	-	52	449,764	-	-	-	-
B115	TCA0001784	Electric	no	65	719,604	-				21	197,364	-	(44)	(522,240)	-				21	197,364	-	0.28	0.28		0.28	0.28		6	55,262	-	6	55,262	-	-	-	-
B116a	TBA0000815	Electric	no	112	965,563	-				35	307,306	-	(77)	(658,257)	-				35	307,306	-	0.10	0.10		0.23	0.23		4	30,731	-	8	70,680	-	5	39,950	-
B117	TCA0001331	Electric	no	59	780,133	-				19	213,965	-	(40)	(566,168)	-				19	213,965	-							-		-	-		-	-	-	-
B118	TAA0001767	Electric	no	155	1,358,695	-				99	519,502	-	(56)	(839,193)	-				99	519,502	-	0.87	0.87		0.87	0.87		86	451,967	-	86	451,967	-	-	-	-
B119	TCA0000744	Electric	no	50	487,263	-				17	147,077	-	(33)	(340,186)	-				17	147,077	-	0.93	0.93		0.93	0.93		16	136,782	-	16	136,782	-	-	-	-
B120	TAA0001772	Electric	no	93	765,274	-				22	155,607	-	(71)	(609,667)	-				22	155,607	-							-		-	-		-	-	-	-
B121	TBA0001420	Electric	no	96	732,865	-				68	511,220	-	(28)	(221,645)	-				68	511,220	-							-		-	-		-	-	-	-
B122	2K08005445	Gas	no	-	-	3,725,770				-	-	3,008,858	-	-	(716,912)				-	-	3,008,858			0.20			0.37	-	-	601,772	-	-	1,103,258	-	-	501,486
B123	2K07000224	Gas	no	-	-	3,497,000				-	-	1,093,590	-	-	(2,403,410)				-	-	1,093,590			0.20			0.30	-	-	218,718	-	-	328,077	-	-	109,359
B124	TAA0001789	Gas	no	-	-	1,654,351				-	-	1,384,296	-	-	(270,055)				-	-	1,384,296			0.25			0.75	-	-	346,074	-	-	1,038,222	-	-	692,148
B125	NC0068194	Gas	no	-	-	959,743				-	-	959,743	-	-	-				-	-	959,743			0.15			0.43	-	-	143,961	-	-	415,888	-	-	271,927
B126	TAA0001341	Gas	no	-	-	2,754,489				-	-	2,072,672	-	-	(681,817)				-	-	2,072,672			0.50			0.50	-	-	1,036,336	-	-	1,036,336	-	-	-
B127a	2K6-L0032G	Gas	no	-	-	506,780				-	-	-	-	-	(506,780)				-	-	-			0.08			0.28	-	-	-	-	-	-	-	-	-
B128a	TAA0001341	Gas	no	-	-	623,988				-	-	758,454	-	-	134,466				-	-	758,454			0.08			0.28	-	-	60,676	-	-	214,895	-	-	154,219
B129	NC0071593	Gas	no	129	2,078,448	861,120				(53)	610,713	473,616	(182)	(1,467,735)	(387,504)				(53)	610,713	473,616			0.10			0.40	-	-	47,362	-	-	189,446	-	-	142,085
B130	2K6-L0588G	Gas	no	-	-	641,903				-	-	219,615	-	-	(422,288)				-	-	219,615			0.08			0.28	-	-	17,569	-	-	61,492	-	-	43,923
B131	TAA0001758	Gas	no	-	-	581,275				-	-	1,454,652	-	-	873,377				-	-	1,454,652							-	-	-	-	-	-	-	-	-
B132	TAA0001352	Gas	no	-	-	165,879				(24)	(48,946)	239,557	(24)	(48,946)	73,678				(24)	(48,946)	239,557			0.77			0.77	-	-	184,459	-	-	184,459	-	-	-
B133	TAA0000423	Gas	no	-	-	156,586				-	-	184,405	-	-	27,819				-	-	184,405			0.90			0.90	-	-	165,965	-	-	165,965	-	-	-
B134	TAA0001352	Gas	no	-	-	59,895				-	-	69,424	-	-	9,529				-	-	69,424			0.57			0.57	-	-	39,572	-	-	39,572	-	-	-
B135	2K07002369	Gas	no	-	-	438,606				-	-	496,881	-	-	58,275				-	-	496,881							-	-	-	-	-	-	-	-	-
Only NTG	TCA0001700	electric	yes	238	2,224,172		191	1,779,338		238	2,224,172		-	-	-				238	2,224,172	-	0.25	0.25		0.50	0.50		60	556,043	-	119	1,112,086	-	60	556,043	-
Only NTG	TBA0001331	electric	yes	543	4,700,757		435	3,760,606		543	4,700,757		-	-	-				543	4,700,757	-	0.25	0.25		0.33	0.33		136	1,175,189	-	179	1,551,250	-	43	376,061	-
Only NTG	NC0048093	electric	yes	76	668,002	-	71	627,922	-	76	668,002	-	-	-	-				76	668,002	-	0.25	0.25		0.50	0.50		19	167,001	-	38	334,001	-	19	167,001	-
Only NTG	NC0041449	Electric	yes	93	445,992	-	87	419,232	-	93	445,992	-	-	-	-				93	445,992	-	0.13	0.13		0.42	0.42		12	57,979	-	39	187,317	-	27	129,338	-
Only NTG	NC0082033	electric	yes	48	421,953	-	45	396,636	-	48	421,953	-	-	-	-				48	421,953	-	0.25	0.25		0.50	0.50		12	105,488	-	24	210,977	-	12	105,488	-
Only NTG	2K6-L0416E	Electric	yes	45	385,069	-	31	269,548	-	45	385,069	-	-	-	-				45	385,069	-	0.10	0.10		0.33	0.33		4	38,507	-	15	127,073	-	10	88,566	-
Only NTG	NC0037536	electric	yes	-	398,589	-	-	374,674	-	-	398,589	-	-	-	-				-	398,589	-	0.13	0.13		0.32	0.32		-	51,817	-	-	127,548	-	-	75,732	-
Only NTG	2K6-L0498E	Electric	yes	-	607,967	-	-	425,577	-	-	607,967	-	-	-	-				-	607,967	-	0.15	0.15		0.27	0.27		-	91,195	-	-	164,151	-	-	72,956	-
Only NTG	2K6-S0314E	Electric	yes	47	332,034	-	33	232,424	-	47	332,034	-	-	-	-				47	332,034	-	0.10	0.10		0.30	0.30		5	33,203	-	14	99,610	-	9	66,407	-
Only NTG	NC0046416	electric	yes	23	207,324	-	22	194,885	-	23	207,324	-	-	-	-				23	207,324	-	0.05	0.05		0.37	0.37		1	10,366	-	9	76,710	-	7	66,344	-
Only NTG	2K6-S0041E	Electric	yes	23	211,940	-	16	148,358	-	23	211,940	-	-	-	-				23	211,940	-	0.10	0.10		0.40	0.40		2	21,194	-	9	84,776	-	7	63,582	-
Only NTG	2K6-S0322E	Electric	yes	49	188,602	-	34	132,021	-	49	188,602	-	-	-	-				49	188,602	-	-	-		0.17	0.17		-	-	-	8	32,062	-	8	32,062	-
Only NTG	NC0078273	electric	yes	37	237,586	-	35	223,331	-	37	237,586	-	-	-	-				37	237,586	-	0.35	0.35		0.47	0.47		13	83,155	-	17	111,665	-	4	28,510	-
Only NTG	2K6-L0747E	Electric	yes	44	216,888	-	31	151,822	-	44	216,888	-	-	-	-				44	216,888	-	0.15	0.15		0.27	0.27		7	32,533	-	12	58,560	-	5	26,027	-
Only NTG	2K6-L0304E	Electric	yes	25	103,580	-	18	72,506	-	25	103,580	-	-	-	-				25	103,580	-	0.15	0.15		0.37	0.37		4	15,537	-	9	38,325	-	6	22,788	-
Only NTG	2K6-S0300E	electric	yes	68	170,074	-	48	119,052	-	68	170,074	-	-	-	-				68	170,074	-	0.20	0.20		0.30	0.30		14	34,015	-	20	51,022	-	7	17,007	-
Only NTG	2K6-S0517E	Electric	yes	-	44,286	-	-	31,000	-	-	44,286	-	-	-	-				-	44,286	-	0.20	0.20		0.40	0.40		-	8,857	-	-	17,714	-	-	8,857	-
Only NTG	2K6-L0383E	Electric	yes	19	173,311	-	13	121,318	-	19	173,311	-	-	-	-				19	173,311	-	0.26	0.26		0.28	0.28		5	45,061	-	5	48,527	-	0	3,466	-
Only NTG	2K6-L0355E	Electric	yes										-	-	-				-	-	-		0.17			0.35		-	-	-	-	-	-	-	-	-
Only NTG	NC0056653	Gas	yes			4,448,679						4,448,679	-	-	-				-	-	4,448,679			0.40			0.53	-	-	1,779,472	-	-	2,357,800	-	-	578,328
Only NTG	2K6-L0355G	Gas	yes	-	-	73,639	-	-	51,547	-	-	73,639	-	-	-				-	-	73,639			0.17			0.35	-	-	12,519	-	-	25,774	-	-	13,255
Only NTG	2K6-S0517G	Gas	yes	-	-	16,171	-	-	11,320	-	-	16,171	-	-	-				-	-	16,171			0.20			0.40	-	-	3,234	-	-	6,468	-	-	3,234
Only NTG	2K07001021	Gas	yes	-	-	10,380	-	-	7,266	-	-	10,380	-	-	-				-	-	10,380			0.32			0.48	-	-	3,322	-	-	4,982	-	-	1,661
Only NTG	NC0036054	both	yes	9	37,788	(647)	8	30,986	(531)	9	37,788	(647)	-	-	-				9	37,788	(647)	0.67	0.67	0.67	0.67	0.67	0.67	6	25,318	(433)	6	25,318	(433)	-	-	-
Only NTG	NC0045629	both	yes	2	6,411	4,212	2	5,257	3,959	2	6,411	4,212	-	-	-				2	6,411	4,212	0.53	0.53	0.53	0.53	0.53	0.53	1	3,398	2,232	1	3,398	2,232	-	-	-
Only NTG	TAA0000486	both	yes	138	1,452,402	376,212	110	1,161,922	300,970	138	1,452,402	376,212	-	-	-				138	1,452,402	376,212	0.73	0.73	0.73	0.73	0.73	0.73	100	1,060,253	274,635	100	1,060,253	274,635	-	-	-
Only NTG	TAA0000711	both	yes	135	1,002,938	110,154	108	802,350	88,123	135	1,002,938	110,154	-	-	-				135	1,002,938	110,154	0.77	0.77	0.77	0.77	0.77	0.77	104	772,262	84,819	104	772,262	84,819	-	-	-
Only NTG	TAA0000897	both	yes	299	2,233,330	53,774	239	1,786,664	43,019	299	2,233,330	53,774	-	-	-				299	2,233,330	53,774	0.67	0.67	0.67	0.67	0.67	0.67	200	1,496,331	36,029	200	1,496,331	36,029	-	-	-
Only NTG	TAA0000897	both	yes	299	2,233,330	53,774	239	1,786,664	43,019	299	2,233,330	53,774	-	-	-				299	2,233,330	53,774	0.73	0.73	0.73	0.73	0.73	0.73	218	1,630,331	39,255	218	1,630,331	39,255	-	-	-
Only NTG	TAA0001078	both	yes	15	123,545	34,416	12	98,836	27,533	15	123,545	34,416	-	-	-				15	123,545	34,416	0.77	0.77	0.77	0.77	0.77	0.77	11	95,130	26,500	11	95,130	26,500	-	-	-
Only NTG	TAA0001256	both	yes	3	12,058	368,525	2	9,646	294,820	3	12,058	368,525	-	-	-				3	12,058	368,525	0.70	0.70	0.70	0.70	0.70	0.70	2	8,441	257,968	2	8,441	257,968	-	-	-
Only NTG	TAA0001341	both	yes	402	3,336,113	3,378,477	321	2,668,891	2,702,782	402	3,336,113	3,378,477	-	-	-				402	3,336,113	3,378,477	0.90	0.90	0.90	0.90	0.90	0.90	362	3,002,502	3,040,629	362	3,002,502	3,040,629	-	-	-
Only NTG	2K07000156	Electric	yes	31	380,489	-	21	266,342	-	31	380,489	-	-	-	-				31	380,489	-	0.47	0.47		0.47	0.47		14	178,830	-	14	178,830	-	-	-	-
Only NTG	2K07000252	Electric	yes	18	238,629	-	13	167,040	-	18	238,629	-	-	-	-				18	238,629	-	0.63	0.63		0.63	0.63		11	150,336	-	11	150,336	-	-	-	-
Only NTG	2K07000332	Electric	yes	44	194,237	-	31	135,966	-	44	194,237	-	-	-	-				44	194,237	-	0.79	0.79		0.79	0.79		35	153,447	-	35	153,447	-	-	-	-
Only NTG	2K07000333	Electric	yes	73	323,998	-	51	226,799	-	73	323,998	-	-	-	-				73	323,998	-	0.79	0.79		0.79	0.79		58	255,958	-	58	255,958	-	-	-	-
Only NTG	2K07000360	Electric	yes	-	359,780	-	-	251,846	-	-	359,780	-	-	-	-				-	359,780	-		0.77			0.77		-	277,031	-	-	277,031	-	-	-	-
Only NTG	2K07000362	Electric	yes	24	173,531	-	17	121,472	-	24	173,531	-	-	-	-				24	173,531	-	0.80	0.80		0.80	0.80		19	138,825	-	19	138,825	-	-	-	-
Only NTG	2K07000365	Electric	yes	40	289,219	-	28	202,453	-	40	289,219	-	-	-	-				40	289,219	-	0.70	0.70		0.70	0.70		28	202,453	-	28	202,453	-	-	-	-
Only NTG	2K07000366	Electric	yes	40	289,219	-	28	202,453	-	40	289,219	-	-	-	-				40	289,219	-	0.70	0.70		0.70	0.70		28	202,453	-	28	202,453	-	-	-	-
Only NTG	2K07000367	Electric	yes	73	530,235	-	51	371,164	-	73	530,235	-	-	-	-				73	530,235	-	0.80	0.80		0.80	0.80		58	424,188	-	58	424,188	-	-	-	-
Only NTG	2K07000483	Electric	yes	105	869,702	-	73	608,791	-	105	869,702	-	-	-	-				105	869,702	-	0.57	0.57		0.57	0.57		60	495,730	-	60	495,730	-	-	-	-
Only NTG	2K07000699	Electric	yes	10	88,476	-	7	61,933	-	10	88,476	-	-	-	-				10	88,476	-	0.90	0.90		0.90	0.90		9	79,628	-	9	79,628	-	-	-	-
Only NTG	2K07000879	Electric	yes	36	316,277	-	25	221,394	-	36	316,277	-	-	-	-				36	316,277	-	0.50	0.50		0.50	0.50		18	158,139	-	18	158,139	-	-	-	-
Only NTG	2K07001054	Electric	yes	230	805,622	-	161	563,935	-	230	805,622	-	-	-	-				230	805,622	-	0.77	0.77		0.77	0.77		177	620,329	-	177	620,329	-	-	-	-
Only NTG	2K07001056	Electric	yes	31	324,411	-	21	227,088	-	31	324,411	-	-	-	-				31	324,411	-	0.80	0.80		0.80	0.80		24	259,529	-	24	259,529	-	-	-	-
Only NTG	2K07001210	Electric	yes	18	117,103	-	12	81,972	-	18	117,103	-	-	-	-				18	117,103	-	0.57	0.57		0.57	0.57		10	66,749	-	10	66,749	-	-	-	-
Only NTG	2K07001244	Electric	yes	3	228,493	-	2	159,945	-	3	228,493	-	-	-	-				3	228,493	-	0.87	0.87		0.87	0.87		3	198,789	-	3	198,789	-	-	-	-
Only NTG	2K07001253	Electric	yes	58	495,686	-	41	346,980	-	58	495,686	-	-	-	-				58	495,686	-	0.57	0.57		0.57	0.57		33	282,541	-	33	282,541	-	-	-	-
Only NTG	2K07001653	Electric	yes	20	113,523	-	14	79,466	-	20	113,523	-	-	-	-				20	113,523	-	0.58	0.58		0.58	0.58		12	65,843	-	12	65,843	-	-	-	-
Only NTG	2K07001656	Electric	yes	69	294,669	-	48	206,268	-	69	294,669	-	-	-	-				69	294,669	-	0.83	0.83		0.83	0.83		57	244,575	-	57	244,575	-	-	-	-
Only NTG	2K07001900	Electric	yes	45	337,824	-	32	236,477	-	45	337,824	-	-	-	-				45	337,824	-	0.56	0.56		0.56	0.56		25	189,181	-	25	189,181	-	-	-	-
Only NTG	2K07002194	Electric	yes	30	223,134	-	21	156,194	-	30	223,134	-	-	-	-				30	223,134	-	0.69	0.69		0.69	0.69		21	153,962	-	21	153,962	-	-	-	-
Only NTG	2K07003730	electric	yes	28	981,189	-	20	686,832	-	28	981,189	-	-	-	-				28	981,189	-	0.78	0.78		0.78	0.78		22	765,327	-	22	765,327	-	-	-	-
Only NTG	2K08004245	electric	yes	86	674,913	-	60	472,439	-	86	674,913	-	-	-	-				86	674,913	-	0.60	0.60		0.60	0.60		52	404,948	-	52	404,948	-	-	-	-
Only NTG	2K08004737	electric	yes	7	49,699	-	5	34,789	-	7	49,699	-	-	-	-				7	49,699	-	0.50	0.50		0.50	0.50		3	24,849	-	3	24,849	-	-	-	-
Only NTG	2K08004743	electric	yes	2	14,679	-	1	10,275	-	2	14,679	-	-	-	-				2	14,679	-	0.50	0.50		0.50	0.50		1	7,339	-	1	7,339	-	-	-	-
Only NTG	2K08006828	Electric	yes	33	72,361	-	23	50,653	-	33	72,361	-	-	-	-				33	72,361	-	0.90	0.90		0.90	0.90		29	65,125	-	29	65,125	-	-	-	-
Only NTG	2K6-L0062E	Electric	yes	61	565,657	-	43	395,960	-	61	565,657	-	-	-	-				61	565,657	-	0.87	0.87		0.87	0.87		53	492,121	-	53	492,121	-	-	-	-
Only NTG	2K6-L0063E	Electric	yes	81	754,209	-	57	527,946	-	81	754,209	-	-	-	-				81	754,209	-	0.87	0.87		0.87	0.87		71	656,162	-	71	656,162	-	-	-	-
Only NTG	2K6-L0100E	Electric	yes	10	41,535	-	7	29,075	-	10	41,535	-	-	-	-				10	41,535	-	0.79	0.79		0.79	0.79		8	32,813	-	8	32,813	-	-	-	-
Only NTG	2K6-L0124E	Electric	yes	-	381,530	-	-	267,071	-	-	381,530	-	-	-	-				-	381,530	-		0.31			0.31		-	118,274	-	-	118,274	-	-	-	-
Only NTG	2K6-L0272E	Electric	yes	25	471,105	-	18	329,774	-	25	471,105	-	-	-	-				25	471,105	-	0.61	0.61		0.61	0.61		15	287,374	-	15	287,374	-	-	-	-
Only NTG	2K6-L0323E	Electric	yes	21	182,104	-	15	127,473	-	21	182,104	-	-	-	-				21	182,104	-	0.43	0.43		0.43	0.43		9	78,305	-	9	78,305	-	-	-	-
Only NTG	2K6-L0344E	Electric	yes	330	565,323	-	231	395,726	-	330	565,323	-	-	-	-				330	565,323	-	1.00	1.00		1.00	1.00		330	565,323	-	330	565,323	-	-	-	-
Only NTG	2K6-L0355E	Electric	yes	-	288,465	-	-	201,926	-	-	288,465	-	-	-	-				-	288,465	-		0.67			0.67		-	193,272	-	-	193,272	-	-	-	-
Only NTG	2K6-L0377E	Electric	yes	159	273,509	-	111	191,456	-	159	273,509	-	-	-	-				159	273,509	-	0.60	0.60		0.60	0.60		95	164,105	-	95	164,105	-	-	-	-
Only NTG	2K6-L0378E	Electric	yes	38	181,131	-	26	126,792	-	38	181,131	-	-	-	-				38	181,131	-	0.82	0.82		0.82	0.82		31	148,527	-	31	148,527	-	-	-	-
Only NTG	2K6-L0382E	Electric	yes	-	246,338	-	-	172,437	-	-	246,338	-	-	-	-				-	246,338	-		0.87			0.87		-	214,314	-	-	214,314	-	-	-	-
Only NTG	2K6-L0436E	Electric	yes	19	249,479	-	13	174,635	-	19	249,479	-	-	-	-				19	249,479	-	0.62	0.62		0.62	0.62		12	154,677	-	12	154,677	-	-	-	-
Only NTG	2K6-L0486E	electric	yes	30	179,048	-	21	125,334	-	30	179,048	-	-	-	-				30	179,048	-	0.79	0.79		0.79	0.79		23	141,448	-	23	141,448	-	-	-	-
Only NTG	2K6-L0681E	Electric	yes	28	321,759	-	19	225,231	-	28	321,759	-	-	-	-				28	321,759	-	0.87	0.87		0.87	0.87		24	279,930	-	24	279,930	-	-	-	-
Only NTG	2K6-L0701E	Electric	yes	26	182,362	-	18	127,653	-	26	182,362	-	-	-	-				26	182,362	-	0.65	0.65		0.65	0.65		17	118,535	-	17	118,535	-	-	-	-
Only NTG	2K6-L0721E	Electric	yes	271	2,343,543	-	189	1,640,480	-	271	2,343,543	-	-	-	-				271	2,343,543	-	0.87	0.87		0.87	0.87		236	2,038,882	-	236	2,038,882	-	-	-	-
Only NTG	2K6-L0767E	electric	yes	111	1,014,924	-	78	710,447	-	111	1,014,924	-	-	-	-				111	1,014,924	-	0.74	0.74		0.74	0.74		82	751,044	-	82	751,044	-	-	-	-
Only NTG	2K6-L0784E	electric	yes	45	199,496	-	31	139,647	-	45	199,496	-	-	-	-				45	199,496	-	0.57	0.57		0.57	0.57		25	113,713	-	25	113,713	-	-	-	-
Only NTG	2K6-L0791E	electric	yes	64	533,714	-	44	373,600	-	64	533,714	-	-	-	-				64	533,714	-	0.77	0.77		0.77	0.77		49	410,960	-	49	410,960	-	-	-	-
Only NTG	2K6-L0889E	Electric	yes	28	195,434	-	20	136,804	-	28	195,434	-	-	-	-				28	195,434	-	0.69	0.69		0.69	0.69		19	134,849	-	19	134,849	-	-	-	-
Only NTG	2K6-S0194E	electric	yes	7	62,032	-	5	43,422	-	7	62,032	-	-	-	-				7	62,032	-	0.74	0.74		0.74	0.74		5	45,904	-	5	45,904	-	-	-	-
Only NTG	2K6-S0228E	electric	yes	51	314,653	-	36	220,257	-	51	314,653	-	-	-	-				51	314,653	-	0.60	0.60		0.60	0.60		31	188,792	-	31	188,792	-	-	-	-
Only NTG	2K6-S0330E	electric	yes	45	312,077	-	32	218,454	-	45	312,077	-	-	-	-				45	312,077	-	0.70	0.70		0.70	0.70		32	218,454	-	32	218,454	-	-	-	-
Only NTG	2K6-S0365E	electric	yes	67	178,281	-	47	124,796	-	67	178,281	-	-	-	-				67	178,281	-	0.90	0.90		0.90	0.90		60	160,452	-	60	160,452	-	-	-	-
Only NTG	2K6-S0432E	Electric	yes	31	266,210	-	22	186,347	-	31	266,210	-	-	-	-				31	266,210	-	0.50	0.50		0.50	0.50		16	133,105	-	16	133,105	-	-	-	-
Only NTG	2K6-S0438E	Electric	yes	32	175,622	-	22	122,935	-	32	175,622	-	-	-	-				32	175,622	-	0.81	0.81		0.81	0.81		26	142,254	-	26	142,254	-	-	-	-
Only NTG	2K6-S0440E	Electric	yes	42	400,758	-	29	280,531	-	42	400,758	-	-	-	-				42	400,758	-	0.78	0.78		0.78	0.78		33	312,591	-	33	312,591	-	-	-	-
Only NTG	2K6-S0584E	electric	yes	11	115,439	-	8	80,807	-	11	115,439	-	-	-	-				11	115,439	-	0.50	0.50		0.50	0.50		6	57,720	-	6	57,720	-	-	-	-
Only NTG	2K6-S0668E	electric	yes	59	291,094	-	41	203,766	-	59	291,094	-	-	-	-				59	291,094	-	0.60	0.60		0.60	0.60		35	174,656	-	35	174,656	-	-	-	-
Only NTG	2K6-S0705E	electric	yes	34	190,907	-	24	133,635	-	34	190,907	-	-	-	-				34	190,907	-	0.57	0.57		0.57	0.57		19	108,817	-	19	108,817	-	-	-	-
Only NTG	2K6-S0772E	electric	yes	25	193,672	-	18	135,570	-	25	193,672	-	-	-	-				25	193,672	-	0.70	0.70		0.70	0.70		18	135,570	-	18	135,570	-	-	-	-
Only NTG	2K6-S0843E	electric	yes	40	162,840	-	28	113,988	-	40	162,840	-	-	-	-				40	162,840	-	0.69	0.69		0.69	0.69		28	112,360	-	28	112,360	-	-	-	-

Table B.3.2 - Net Savings Impact of Net-to-Gross Adjustments Following Review of 306 Custom Project Net-to-Gross Evaluations
Data Sources: 2006-2008 Fabrication, Process and Manufacturing Report ("FAB") Tables 4-1, 4-2, Appendices C.3 & D (Final Site Reports) by Itron Dated Feb 3, 2010

Final Site Report (FSRs) & Tables 4.1 & 4.2 FAB Report									Evaluator (Itron) Final Results			PG&E Calculations									Evaluator (Itron Final Results)			PG&E Calculations			Evaluator (Itron) Final Results			PG&E Calculations					
Details of PG&E Site or Application ID				PG&E Ex-Ante Savings Claim					Evaluated Ex-Post Gross Savings Estimate			Calculated Gross Savings Loss			PG&E Gross Savings Adjustments			PG&E Final Gross Ex-Post Savings Estimate			Evaluation Ex-Post NTGR Value			PG&E Adjusted NTGR Value			Evaluator Ex-Post Net Savings			PG&E Ex-Post Net Savings			Difference in Net Ex-Post Savings		
Site ID	APPLICATION_CODE	Fuel Sampled	PG&E gross is pass thru	GROSS KW	GROSS KWH	GROSS THM	NET KW	NET KWH	NET THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm
Only NTG	2K6-S0863E	electric	yes	24	233,503	-	17	163,452	-	24	233,503	-	-	-	-				24	233,503	-	0.70	0.70		0.70	0.70		17	163,452	-	17	163,452	-	-	-	-
Only NTG	NC0031749	electric	yes	89	1,040,066	-	84	977,662	-	89	1,040,066	-	-	-	-				89	1,040,066	-	-	-		-	-		-	-	-	-	-	-	-	-	-
Only NTG	NC0034089	electric	yes	122	296,916	(4)	102	247,578	(4)	122	296,916	(4)	-	-	-				122	296,916	(4)	0.52	0.52	0.52	0.52	0.52	0.52	63	154,396	(2)	63	154,396	(2)	-	-	-
Only NTG	NC0037535	electric	yes	-	221,696	-	-	208,394	-	-	221,696	-	-	-	-				-	221,696	-		0.42			0.42		-	93,112	-	-	93,112	-	-	-	-
Only NTG	NC0040771	Electric	yes	73	638,186	-	69	599,895	-	73	638,186	-	-	-	-				73	638,186	-	0.30	0.30		0.30	0.30		22	191,456	-	22	191,456	-	-	-	-
Only NTG	NC0040773	Electric	yes	36	318,427	-	34	299,321	-	36	318,427	-	-	-	-				36	318,427	-	0.30	0.30		0.30	0.30		11	95,528	-	11	95,528	-	-	-	-
Only NTG	NC0041691	Electric	yes	8	54,612	-	8	51,335	-	8	54,612	-	-	-	-				8	54,612	-	0.67	0.67		0.67	0.67		5	36,590	-	5	36,590	-	-	-	-
Only NTG	NC0042309	Electric	yes	5	37,373	-	4	35,131	-	5	37,373	-	-	-	-				5	37,373	-	0.60	0.60		0.60	0.60		3	22,424	-	3	22,424	-	-	-	-
Only NTG	NC0043260	Electric	yes	36	213,333	-	33	200,533	-	36	213,333	-	-	-	-				36	213,333	-	0.79	0.79		0.79	0.79		28	168,533	-	28	168,533	-	-	-	-
Only NTG	NC0043329	Electric	yes	26	171,778	-	24	161,471	-	26	171,778	-	-	-	-				26	171,778	-	0.79	0.79		0.79	0.79		21	135,705	-	21	135,705	-	-	-	-
Only NTG	NC0044151	Electric	yes	33	291,414	-	31	273,929	-	33	291,414	-	-	-	-				33	291,414	-	0.28	0.28		0.28	0.28		9	81,596	-	9	81,596	-	-	-	-
Only NTG	NC0045091	Electric	yes	116	1,011,780	-	109	951,073	-	116	1,011,780	-	-	-	-				116	1,011,780	-	0.90	0.90		0.90	0.90		104	910,602	-	104	910,602	-	-	-	-
Only NTG	NC0045249	Electric	yes	11	167,566	-	10	157,512	-	11	167,566	-	-	-	-				11	167,566	-	-	-		-	-		-	-	-	-	-	-	-	-	-
Only NTG	NC0046149	electric	yes	12	189,933	-	11	178,537	-	12	189,933	-	-	-	-				12	189,933	-	-	-		-	-		-	-	-	-	-	-	-	-	-
Only NTG	NC0046712	electric	yes	28	158,540	-	23	130,003	-	28	158,540	-	-	-	-				28	158,540	-	0.87	0.87		0.87	0.87		24	137,930	-	24	137,930	-	-	-	-
Only NTG	NC0048213	electric	yes	0	991	-	0	932	-	0	991	-	-	-	-				0	991	-	0.43	0.43		0.43	0.43		0	426	-	0	426	-	-	-	-
Only NTG	NC0048613	electric	yes	6	22,834	-	6	21,464	-	6	22,834	-	-	-	-				6	22,834	-	0.80	0.80		0.80	0.80		5	18,267	-	5	18,267	-	-	-	-
Only NTG	NC0049873	electric	yes	19	299,770	-	18	281,784	-	19	299,770	-	-	-	-				19	299,770	-	0.73	0.73		0.73	0.73		14	219,831	-	14	219,831	-	-	-	-
Only NTG	NC0050173	electric	yes	28	243,750	-	26	229,125	-	28	243,750	-	-	-	-				28	243,750	-	0.97	0.97		0.97	0.97		27	236,438	-	27	236,438	-	-	-	-
Only NTG	NC0052573	electric	yes	90	453,205	-	85	426,013	-	90	453,205	-	-	-	-				90	453,205	-	0.43	0.43		0.43	0.43		39	194,878	-	39	194,878	-	-	-	-
Only NTG	NC0054374	electric	yes	89	776,084	-	84	729,519	-	89	776,084	-	-	-	-				89	776,084	-	0.90	0.90		0.90	0.90		80	698,476	-	80	698,476	-	-	-	-
Only NTG	NC0055693	electric	yes	19	169,220	-	18	159,067	-	19	169,220	-	-	-	-				19	169,220	-	0.30	0.30		0.30	0.30		6	50,766	-	6	50,766	-	-	-	-
Only NTG	NC0055713	electric	yes	19	169,220	-	18	159,067	-	19	169,220	-	-	-	-				19	169,220	-	0.23	0.23		0.23	0.23		4	38,921	-	4	38,921	-	-	-	-
Only NTG	NC0055714	electric	yes	19	169,220	-	18	159,067	-	19	169,220	-	-	-	-				19	169,220	-	0.43	0.43		0.43	0.43		8	72,765	-	8	72,765	-	-	-	-
Only NTG	NC0057813	electric	yes	45	314,718	-	42	295,835	-	45	314,718	-	-	-	-				45	314,718	-	0.37	0.37		0.37	0.37		17	116,446	-	17	116,446	-	-	-	-
Only NTG	NC0059183	electric	yes	0	84,489	-	0	79,420	-	0	84,489	-	-	-	-				0	84,489	-	0.47	0.47		0.47	0.47		0	39,710	-	0	39,710	-	-	-	-
Only NTG	NC0059191	electric	yes	2	450,478	-	2	423,449	-	2	450,478	-	-	-	-				2	450,478	-	0.57	0.57		0.57	0.57		1	256,772	-	1	256,772	-	-	-	-
Only NTG	NC0061893	electric	yes	48	402,286	-	45	378,149	-	48	402,286	-	-	-	-				48	402,286	-	0.83	0.83		0.83	0.83		40	333,897	-	40	333,897	-	-	-	-
Only NTG	NC0068233	electric	yes	24	208,333	-	23	195,833	-	24	208,333	-	-	-	-				24	208,333	-	0.77	0.77		0.77	0.77		18	160,416	-	18	160,416	-	-	-	-
Only NTG	NC0071153	electric	yes	18	87,679	-	17	82,418	-	18	87,679	-	-	-	-				18	87,679	-	0.80	0.80		0.80	0.80		14	70,143	-	14	70,143	-	-	-	-
Only NTG	NC0072693	electric	yes	17	75,608	-	16	71,072	-	17	75,608	-	-	-	-				17	75,608	-	0.60	0.60		0.60	0.60		10	45,365	-	10	45,365	-	-	-	-
Only NTG	NC0072933	electric	yes	35	298,952	-	33	281,015	-	35	298,952	-	-	-	-				35	298,952	-	0.60	0.60		0.60	0.60		21	179,371	-	21	179,371	-	-	-	-
Only NTG	NC0073593	electric	yes	57	499,270	-	47	409,401	-	57	499,270	-	-	-	-				57	499,270	-	0.80	0.80		0.80	0.80		46	399,416	-	46	399,416	-	-	-	-
Only NTG	TAA0000252	electric	yes	4	31,499		3	25,199		4	31,499	-	-	-	-				4	31,499	-	0.83	0.83		0.83	0.83		3	26,144	-	3	26,144	-	-	-	-
Only NTG	TAA0000484	electric	yes	151	1,320,088		105	924,062		151	1,320,088	-	-	-	-				151	1,320,088	-	0.35	0.35		0.35	0.35		53	462,031	-	53	462,031	-	-	-	-
Only NTG	TAA0000966	electric	yes	146	1,421,049		116	1,136,839		146	1,421,049	-	-	-	-				146	1,421,049	-	0.88	0.88		0.88	0.88		128	1,250,523	-	128	1,250,523	-	-	-	-
Only NTG	TAA0000998	electric	yes	14	157,410		12	125,928		14	157,410	-	-	-	-				14	157,410	-	0.82	0.82	0.82	0.82	0.82	0.82	12	129,076	-	12	129,076	-	-	-	-
Only NTG	TAA0001036	electric	yes	293	1,931,069		205	1,351,748		293	1,931,069	-	-	-	-				293	1,931,069	-	0.81	0.81		0.81	0.81		237	1,564,166	-	237	1,564,166	-	-	-	-
Only NTG	TAA0001093	electric	yes	458	3,071,407	47,266	366	2,457,126	37,813	458	3,071,407	47,266	-	-	-				458	3,071,407	47,266	0.90	0.90	0.90	0.90	0.90	0.90	412	2,764,266	42,539	412	2,764,266	42,539	-	-	-
Only NTG	TAA0001129	electric	yes	110	959,529	-	88	767,623	-	110	959,529	-	-	-	-				110	959,529	-	0.75	0.75		0.75	0.75		82	719,647	-	82	719,647	-	-	-	-
Only NTG	TAA0001229	electric	yes	206	763,817		144	534,672		206	763,817	-	-	-	-				206	763,817	-	0.58	0.58		0.58	0.58		119	443,014	-	119	443,014	-	-	-	-
Only NTG	TAA0001236	electric	yes	46	153,442		32	107,409		46	153,442	-	-	-	-				46	153,442	-	0.67	0.67		0.67	0.67		31	102,806	-	31	102,806	-	-	-	-
Only NTG	TAA0001316	electric	yes	323	1,965,020		258	1,572,016		323	1,965,020	-	-	-	-				323	1,965,020	-	0.60	0.60		0.60	0.60		194	1,179,012	-	194	1,179,012	-	-	-	-
Only NTG	TAA0001447	electric	yes	39	181,350		27	126,945		39	181,350	-	-	-	-				39	181,350	-	0.80	0.80		0.80	0.80		31	145,080	-	31	145,080	-	-	-	-
Only NTG	TCA0000058	electric	yes	233	2,003,324		187	1,602,659		233	2,003,324	-	-	-	-				233	2,003,324	-	0.62	0.62		0.62	0.62		145	1,242,061	-	145	1,242,061	-	-	-	-
Only NTG	TCA0000251	electric	yes	235	2,241,605		188	1,793,284	-	235	2,241,605	-	-	-	-				235	2,241,605	-	0.62	0.62		0.62	0.62		145	1,389,795	-	145	1,389,795	-	-	-	-
Only NTG	TCA0000252	electric	yes	72	624,697		58	499,758		72	624,697	-	-	-	-				72	624,697	-	0.75	0.75		0.75	0.75		54	468,523	-	54	468,523	-	-	-	-
Only NTG	TCA0000257	electric	yes	273	2,858,292		218	2,286,634	-	273	2,858,292	-	-	-	-				273	2,858,292	-	0.62	0.62		0.62	0.62		169	1,772,141	-	169	1,772,141	-	-	-	-
Only NTG	TCA0000276	electric	yes	824	8,276,416		659	6,621,133		824	8,276,416	-	-	-	-				824	8,276,416	-	0.27	0.27		0.27	0.27		222	2,234,632	-	222	2,234,632	-	-	-	-
Only NTG	TCA0000304	electric	yes	230	2,513,766		184	2,011,013	-	230	2,513,766	-	-	-	-				230	2,513,766	-	0.62	0.62		0.62	0.62		142	1,558,535	-	142	1,558,535	-	-	-	-
Only NTG	TCA0000495	electric	yes	573	6,022,194		458	4,817,755		573	6,022,194	-	-	-	-				573	6,022,194	-	0.50	0.50		0.50	0.50		286	3,011,097	-	286	3,011,097	-	-	-	-
Only NTG	TCA0000495	electric	yes	573	6,022,194		458	4,817,755	-	573	6,022,194	-	-	-	-				573	6,022,194	-	0.45	0.45		0.45	0.45		258	2,709,987	-	258	2,709,987	-	-	-	-
Only NTG	TCA0000744	electric	yes	553	5,728,927		442	4,583,142	-	553	5,728,927	-	-	-	-				553	5,728,927	-							-	-	-	-	-	-	-	-	-
Only NTG	TCA0000998	electric	yes	272	2,529,338		217	2,023,470		272	2,529,338	-	-	-	-				272	2,529,338	-	0.50	0.50		0.50	0.50		136	1,264,669	-	136	1,264,669	-	-	-	-
Only NTG	TCA0001122	electric	yes	531	5,324,382		425	4,259,506		531	5,324,382	-	-	-	-				531	5,324,382	-	0.73	0.73		0.73	0.73		388	3,886,799	-	388	3,886,799	-	-	-	-
Only NTG	TCA0001250	electric	yes	1,036	10,302,280		829	8,241,824		1,036	10,302,280	-	-	-	-				1,036	10,302,280	-	0.80	0.80		0.80	0.80		829	8,241,824	-	829	8,241,824	-	-	-	-
Only NTG	TCA0001250	electric	yes	1,036	10,302,280		829	8,241,824		1,036	10,302,280	-	-	-	-				1,036	10,302,280	-	0.38	0.38		0.38	0.38		394	3,914,866	-	394	3,914,866	-	-	-	-
Only NTG	TCA0001331	electric	yes	365	3,792,002		292	3,033,602		365	3,792,002	-	-	-	-				365	3,792,002	-	0.45	0.45		0.45	0.45		164	1,706,401	-	164	1,706,401	-	-	-	-
Only NTG	TCA0001331	electric	yes									-	-	-	-				-	-	-	0.50	0.50		0.50	0.50		-	-	-	-	-	-	-	-	-
Only NTG	TCA0001781	electric	yes	512	4,737,296		410	3,789,837	-	512	4,737,296	-	-	-	-				512	4,737,296	-	0.50	0.50		0.50	0.50		256	2,368,648	-	256	2,368,648	-	-	-	-
Only NTG	2K07002365	Gas	yes	-	-	45,933	-	-	32,153	-	-	45,933	-	-	-				-	-	45,933			0.53			0.53	-	-	24,279	-	-	24,279	-	-	-
Only NTG	2K6-L000224	Gas	yes			1,093,590			831,128			1,093,590	-	-	-				-	-	1,093,590							-	-	-	-	-	-	-	-	-
Only NTG	2K6-L0071G	Gas	yes	-	-	254,047	-	-	177,833	-	-	254,047	-	-	-				-	-	254,047			0.78			0.78	-	-	198,157	-	-	198,157	-	-	-
Only NTG	2K6-L0477G	Gas	yes	-	-	87,342	-	-	61,139	-	-	87,342	-	-	-				-	-	87,342			0.48			0.48	-	-	41,924	-	-	41,924	-	-	-
Only NTG	2K6-S0038G	Gas	yes	-	-	24,075	-	-	16,853	-	-	24,075	-	-	-				-	-	24,075			0.72			0.72	-	-	17,334	-	-	17,334	-	-	-
Only NTG	2K6-S0417G	Gas	yes	-	-	3,253	-	-	2,277	-	-	3,253	-	-	-				-	-	3,253			0.50			0.50	-	-	1,627	-	-	1,627	-	-	-
Only NTG	2K6-S0560G	Gas	yes	-	-	5,548	-	-	3,884	-	-	5,548	-	-	-				-	-	5,548			0.69			0.69	-	-	3,831	-	-	3,831	-	-	-
Only NTG	NC0057333	Gas	yes	-	-	43,626	-	-	41,008	-	-	43,626	-	-	-				-	-	43,626			0.82			0.82	-	-	35,773	-	-	35,773	-	-	-
Only NTG	TAA0000756	Gas	yes			40,395			32,316			40,395	-	-	-				-	-	40,395			0.83			0.83	-	-	33,528	-	-	33,528	-	-	-
Only NTG	TAA0000820	Gas	yes			32,778			26,222			32,778	-	-	-				-	-	32,778			0.61			0.61	-	-	19,995	-	-	19,995	-	-	-
Only NTG	NC0037630		yes										-	-	-				-	-	-	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	-	-	-	-	-
Only NTG	TAA0000486		yes										-	-	-				-	-	-	0.40	0.40	0.40	0.40	0.40	0.40	-	-	-	-	-	-	-	-	-
Only NTG	TAA0000711		yes										-	-	-				-	-	-	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	-	-	-	-	-
Only NTG	TAA0000825		yes	-	57,258	61,582	-	45,806	49,266	-	57,258	61,582	-	-	-				-	57,258	61,582		0.73	0.73		0.73	0.73	-	41,989	45,160	-	41,989	45,160	-	-	-
Only NTG	TAA0000966		yes										-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Only NTG	TAA0000966		yes										-	-	-				-	-	-	0.90	0.90	0.90	0.90	0.90	0.90	-	-	-	-	-	-	-	-	-
Only NTG	TAA0000998		yes										-	-	-				-	-	-	0.83	0.83	0.83	0.83	0.83	0.83	-	-	-	-	-	-	-	-	-
Only NTG	TAA0001078		yes										-	-	-				-	-	-	0.93	0.93	0.93	0.93	0.93	0.93	-	-	-	-	-	-	-	-	-
Only NTG	TAA0001093		yes										-	-	-				-	-	-	0.87	0.87	0.87	0.87	0.87	0.87	-	-	-	-	-	-	-	-	-
Only NTG	TBA0001331		yes										-	-	-				-	-	-	0.56	0.56		0.56	0.56		-	-	-	-	-	-	-	-	-
Only NTG	TBA0001331		yes										-	-	-				-	-	-	0.66	0.66		0.66	0.66		-	-	-	-	-	-	-	-	-
Only NTG	TCA0000998		yes										-	-	-				-	-	-	0.90	0.90	0.90	0.90	0.90	0.90	-	-	-	-	-	-	-	-	-
Only NTG	TCA0000998		yes										-	-	-				-	-	-	0.80	0.80	0.80	0.80	0.80	0.80	-	-	-	-	-	-	-	-	-
Only NTG	TCA0001122		yes										-	-	-				-	-	-	0.62	0.62		0.62	0.62		-	-	-	-	-	-	-	-	-

Results for all 306 Projects With Data in the FAB Report--->	Sum PG&E Ex-Ante Savings Estimate 306 FAB projects						Sum Ex-Post Gross Savings Estimate			Sum Gross Savings Loss 306 FAB Projects			PG&E Sum Gross Savings Adjustments 306 FAB projects			PG&E Sum Final Gross Ex-Post Savings 306 FAB Projects			Evaluation ex-post NTGR Value			PG&E Adjusted NTGR Value			Evaluator ex-post Net Savings for 306 FAB Projects			PG&E Ex-post Net Savings for 306 FAB Projects			Difference in Net Ex-Post Savings for 306 FAB Projects		
	GROSS KW	GROSS KWH	GROSS THM	NET KW	NET KWH	NET THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	GROSS KW	GROSS KWH	GROSS THM	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm	kW	kWh	Therm
	37,557	319,698,748	43,937,577	12,544	109,664,742	4,885,716	24,394	220,275,606	40,026,100	(13,163)	(99,423,142)	(3,911,477)	4,551	37,433,758	15,864,680	28,944	257,709,364	46,762,318	0.58	0.55	0.35	0.71	0.68	0.46	14,230	120,880,669	14,056,230	17,308	148,884,107	18,543,976	3,078	28,003,438	4,487,746
														w/o B063 Therms	**6,736,218**																		

Notes
1. PG&E tracking data was used for the ex-ante gross and net PG&E savings claims for all the "ONLY NTG" applications
2. Table 4-1 in Fabrication Report shows the results for the FSR GRRs
3. Table 4-2 in Fabrication Report shows the results for the FSR NTGs
4. Appendix C.3 shows the actual NTGR scores for all the NTG'd applications
5. Appendix D (FSRs) shows by Site ID the ex-ante, ex-post gross and net savings and explains NTGR rationale
6. PG&E Adjustments: Gross in columns T, U & V.
7. PG&E Adjustment: NTGR in yellow cells in columns AC, AD & AE
8. PG&E Net and NTGR Adjustments Do Not Include Project B063's 9.1 MMTherms

Table B.3.3 - Gross Savings Impact of Adjustments Following Review

FSR Name (Itron Site ID#)	Ex Ante (Gross)			Ex Post (Gro	
	kW	kWh	Therms	kW	kWh
B026a	754	6,612,695	-	149	1,308,333
B041a	-	-	4,919,708	-	-
B046	358	3,696,381	-	173	1,790,525
B055	355	3,015,908	-	-	-
B063	394	3,451,202	-	(1,107)	(5,563,434)
B093	-	-	2,223,159	-	-
B095	3,452	14,966,829	-	-	(30,324)
B097	1,002	10,096,226	-	480	4,814,890
B100	347	2,979,032	-	113	817,053
B096	436	4,782,886	-	-	-
Total	**7,098**	**49,601,159**	**7,142,867**	**(192)**	**3,137,043**

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ss)	PG&E Adjusted Ex Post			Adjusted Difference		
Therms	kW	kWh	Therms	kW	kWh	Therms
-	669	5,860,000	-	520	4,551,667	-
-	-	-	4,919,708	-	-	4,919,708
-	255	2,267,513	-	82	476,988	-
-	355	3,015,908	-	355	3,015,908	-
-	394	3,451,202	-	1,501	9,014,636	-
406,649	-	-	2,223,159	-	-	1,816,510
-	1,571	14,706,961	-	1,571	14,737,285	-
-	561	5,628,606	-	81	813,716	-
-	118	857,725	-	5	40,672	-
-	436	4,782,886	-	436	4,782,886	-
406,649	**4,359**	**40,570,801**	**7,142,867**	**4,551**	**37,433,758**	**6,736,218**

APPENDIX B.4

Appendix B.4

PG&E Assessment of 2006-2008 Custom Project Impact Evaluations

Summary Table

FSR Name (Itron Site ID#)	Ex Ante (Gross)			Ex Post (Gross)			PG&E Adjusted Ex Post (2016)			Adjusted Difference (PG&E Adjusted - Ex Post Evaluated)		
	kW	kWh	Therms	kW	kWh	Therms	kW	kWh	Therms	kW	kWh	Therms
B026a	754	6,612,695	-	149	1,308,333	-	669	5,860,000	-	520	4,551,667	-
B041a	-	-	4,919,708	-	-	-	-	-	4,919,708	-	-	4,919,708
B046	358	3,696,381	-	173	1,790,525	-	255	2,267,513	-	82	476,988	-
B055	355	3,015,908	-	-	-	-	355	3,015,908	-	355	3,015,908	-
B063	394	3,451,202	-	(1,107)	(5,563,434)	-	394	3,451,202	-	1,501	9,014,636	-
B093	-	-	2,223,159	-	-	406,649	-	-	2,223,159	-	-	1,816,510
B095	3,452	14,966,829	-	-	(30,324)	-	1,571	14,706,961	-	1,571	14,737,285	-
B097	1,002	10,096,226	-	480	4,814,890	-	561	5,628,606	-	81	813,716	-
B100	347	2,979,032	-	113	817,053	-	118	857,725	-	5	40,672	-
B096	436	4,782,886	-	-	-	-	436	4,782,886	-	436	4,782,886	-
Total	**7,098**	**49,601,159**	**7,142,867**	**(192)**	**3,137,043**	**406,649**	**4,359**	**40,570,801**	**7,142,867**	**4,551**	**37,433,758**	**6,736,218**

B026a

IOU Project Number: NC0050053

Program Number: PGE2004

Program Name: Fabrication, Process and Heavy Industrial Manufacturing

Discrepancy Issue: Baseline/ISP

SUMMARY

There are two concerns with the project evaluation: one concerning the pipe inside coating (baseline), and the other concerning the time period for evaluation (projection). A conservative estimate was made using the first year flow (500,000 Barrels Per Day - BPD) and the pipe baseline was changed to a more realistic 30" diameter for that flow requirement. A 42" pipe with the special coating that reduces friction was installed.

COMMENT ON METHODOLOGY

20-year PROJECTION

Large capital-intensive infrastructure projects are based on multi-year projections by design. Designing to accommodate planned increased load, the design team considers energy savings measures over a multi-year scenario to evaluate options. PG&E used a 20-year projection to capture the anticipated fluctuation in flow rates. Based on the customer input, flow rates were projected to go down after 10 years. Therefore, the 20-year projection reflected lower savings than a 10-year projection would have and approximately 6% greater than a 5-year projection.

BASELINE and INDUSTRY STANDARD PRACTICE

As a New Construction/Increased Load project, an uncoated 36" pipeline baseline was chosen as the realistic, conservative pipe size to allow for the fluctuations in projected flow and represented Industry Standard Practice for this time period. In the ex post evaluation, the baseline friction coefficient was changed from an uncoated pipe to a coated pipe. In some cases, coatings are used to protect from corrosion, but they are not necessarily the higher cost epoxy coating used in this case to reduce friction in order to save energy. Another project from this time period (Nacimiento Pipeline project) used the same uncoated friction coefficient both pre and post because no coating was applied. This supports standard practice being uncoated at this time. The final site report contains contradictory statements regarding industry standard practice. On one hand, it was stated that "the baseline condition was verified through customer interviews." However, the Final Site Report Net to Gross evaluation states that: "The timing and selection score for this project was relatively high (8) because of the account rep's role in pointing out the energy efficiency benefits of coating the pipe..." This statement supports the assertion that coating the pipe was considered for energy efficiency purposes, and was not standard practice. Using coated pipe as the baseline significantly reduces savings associated with reduced friction losses and does not reflect ISP at the time of the project's execution.

Note: The existing pre condition pipeline was a 30" pipe, not the larger 36" pipe used for the baseline. The incremental cost of coating the pipe was over $800k, representing about 50% of the energy efficiency incremental cost for the project or 6% of the total project cost. This was a significant investment made to improve the energy efficiency of the operation.

FLOW RATES

Concerning flow rates, the main difference in the analysis is the evaluator's use of the first year's (2008) production flow rates versus the original ex-ante analysis that took into account planned flow rates over a 20-year period. The ex-ante report assumed lower production flow the first year, and was only about 8% greater than the post evaluations found. Therefore, our original analysis was reasonable and did recognize lower flow the first year. The evaluator stated that the customer reported that production level is expected to increase over the next few years.

Furthermore, if only the first year flows were used in the analysis, the 30" pipe should have been used as the baseline, resulting in even more savings relative to that size pipe. However, since the projected larger flows were assumed, a larger baseline pipe was assumed.

B041a

IOU Project Number: 2K07000155

Program Number: PGE2004

Program Name: Customized Retrofit

Discrepancy Issue: Miscategorized Project

PROJECT SUMMARY

Two separate boiler systems were tied together in this project. One system is a boiler that runs on a mix of coal and natural gas, the other is 100% natural gas fired boiler system. The implemented measures captured previously wasted heat at the coal/natural gas fired system and delivered it to the 100% natural gas system, allowing the 100% natural gas system to be shut off completely. In addition to completely shutting off the natural gas boiler there were additional coal energy savings. No increase in either fuel stream occurred with these implemented measures.

This project was miscategorized in the ex post analysis. Evaluators categorized it to be a "fuel switching" project and disallowed all savings estimates. Fuel switching is defined as substituting one fuel for another. However, this project did not involve fuel switching but rather two EE measures: (1) Installation of a new heat exchanger at the company's Facility #2 to recover heat from the spent brine. (2) Installation of a new 90-psig flash tank to reduce the consumption of 450 psig steam at Facility #2. Therefore, there is no fuel substitution or increase in any fuel stream as a result of the implemented measures. Ex ante savings estimates previously submitted should be reconsidered.

COMMENT ON METHODOLOGY

Evaluator's calculated savings for the implemented measures agree with those in the original analysis. In fact, the evaluators calculated Greater overall savings than those which were claimed in the original IR Review which predicates there was a reduction in both natural gas and coal fuel sources. However, the project miscategorization resulted in a disallowance of 100% of the energy savings.

B046

IOU Project Number: TCA0001781

Program Number: PGE2058

Program Name: Customized Retrofit

Discrepancy Issue: Incorrect Calculation of kW Adjustment Factors for Pump-off Controllers

INCORRECT CALCULATION OF kW ADJUSTMENT FACTOR

The gross and net kW and kWh savings estimates for 2006-2008 Pump-off-controllers (POCs) were based on incorrect calculations of the kW adjustment factor.

DATA QUALITY ISSUES

1) This sample is not representative of well conditions found in the 41 POC assessments.

2) PG&E identified three major issues with the data used to develop the kW Adjustment Factor:

   a) A total of 28 wells were monitored at two sites (13 at Kern and 15 at Midway Sunset fields) to estimate the kW Adjustment Factor. This factor was applied to the 1266 POC projects implemented by PG&E. Half of the sampled sites produced questionable data including negative savings.

   b) A review of the data for these 28 wells' kW Adjustment Factor shows two main areas of serious concern: 1) A previous value in the draft report of 78.4% was used in most POC assessments although an average kW Adjustment Factor (pre-kW / post-kW) of 81.35% was reported in the final report (See Appendix E, Table 4, page E-11 and Table A-10 in project FSR B001).

   c) The Kern wells (1 thru 13) show relative uniformity in the ratio, averaging 95.1% ± 9.0% StdDev. The Midway Sunset wells (14 thru 28) vary over a greater range from 33% to 163%, and average 64% ± 33.9% StdDev. The Midway Sunset data is inconsistent and does not align with the physical reality of the system nor with the 2010-12 Evaluation Study conducted by Itron, which resulted in an average Adjustment Factor of 94.4% ± 4.2% StdDev.

3) Negative Energy Savings at Midway Sunset are not substantiated. Table A-7 in the FSR for project B001 lists the energy savings for each well tested. Three of the wells show negative energy savings. This is not substantiated because if a POC is in operation, and the runtime is less than 100%, the total energy use cannot be greater than the baseline energy. This indicates that either the oil well conditions changed between the pre and post periods or the monitored data is faulty. All of the data at Midway Sunset are

irregular because of the incorrect adjustment factors and the unusually low savings. PG&E proposes that the Midway Sunset field data not be used.

RECOMMENDATION

The 2010-12 kW Adjustment results are very similar to those from the 2006-2008 Kern wells and PG&E recommends that only the Kern field values be used for the kW Adjustment Factor.

ISSUES RELATED TO METHODOLOGY

1) Short term kW used with annual runtimes:

The use of short term kW measurements is not appropriate with the Evaluator's use of annual runtimes from the SCADA system. Though the kW load of a pump is expected to increase with a POC installed, the reduced runtime results in a lower average kW for the year. As the runtime changes, the kW changes because the density of the fluid in the column is different as runtimes change. The data provided by the Evaluator demonstrates this relationship – see figure below. The triangles in the figure show the actual post-POC kW load as the runtime changes. The solid line shows the post-POC annual average kW for estimating the kW savings. The average kW during the monitoring period, which had lower runtimes, is higher than the kW expected during the long-term SCADA period, which had higher runtimes.

To properly estimate post-installation energy use, the Evaluator should have used either:

1) the monitored kW values with their corresponding monitored runtimes OR

2) properly adjusted kW values corresponding to the annual runtimes together with the annual runtimes from the SCADA.

FUTURE IMPROVEMENT

Due to issues identified in the 2006-2008 evaluation, the CPUC's evaluators and IOUs worked collaboratively and further refined the methods and data used to develop more accurate savings estimates for POCs in the 2010-2012 evaluation (applied to E034 only). PG&E believes that the 2006-2008 POC savings assessments should be re-estimated using the final, "best practice" methods used for 2010-2012. An alternative would be to adjust the 2006-2008 results drawing from the 2010-2012 collaborative experience. This collaboration improved accuracy of the GRR for E034 from 39.5% to 74%.

Backup:

B046 – Installation of 38 POCs on existing oil wells

Pre Report – various

Post-installation Report – various

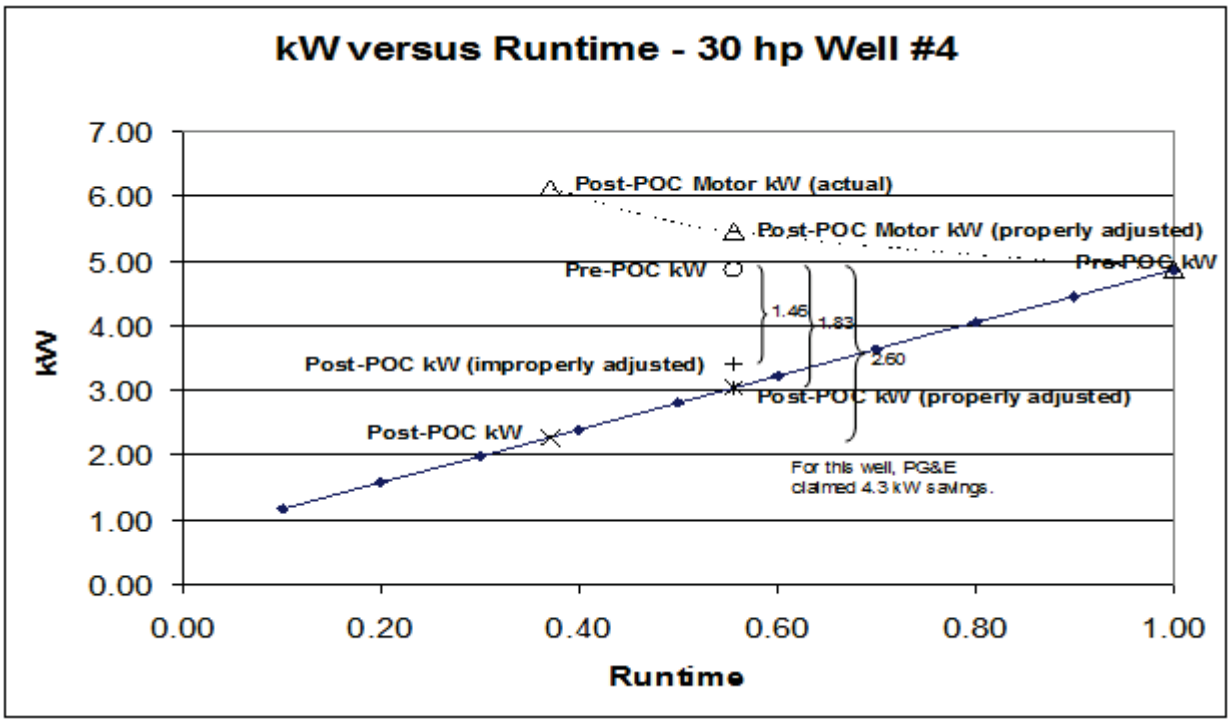
A general approach was used by the CPUC for all POC projects that were evaluated from 2006-08. For this and two other sets of projects, a sample of 14 out of 139 wells were analyzed to develop the load factors and run times that are used in their energy savings calculation. The kW adjustment factor is based on a total of 28 wells that were monitored at two other sites (13 at Kern and 15 at Midway Sunset fields) to apply to the 1266 POC projects implemented by PG&E. Savings of 3,696,381 kWh/yr and 357.7 kW were reported for B046. The CPUC calculated savings of 1,480,714 kWh/yr and 135.5 kW.

There is a problem with the accuracy of data collected at Midway Sunset that are used to develop the kW adjustment factor. Several wells had negative savings (which is impossible) and the kW adjustment factors had an unusually wide range (33% to 163%, averaging 64% +/-33.9%). One would expect the average to be similar to the Kern River results of 95.1% +/-9.0%, and to the 2010-12 evaluation results of 94.4% +/-4.2%. The Midway Sunset results should not be used, since there is no reasonable explanation for their difference.

A kW adjustment factor of 95% should be used, instead of the 78.4% factor that was used in B046. This would increase the CPUC's savings estimate by 21%.

There is also an issue of using long term runtimes that differ from short term runtimes, and not using the correct adjustment factors for kW, since the actual kW varies with runtime. The CPUC simply used the ratio of runtimes to adjust kW.

Other issues are presented in the POC Issue 2006-08_1 22 2016 paper that was recently developed.



B055

IOU Project Number: TBA0001717

Program Number: PGE2064

Program Name: NEXANT REEP

Discrepancy Issue: Miscategorized Project

SUMMARY

The FSR reported no savings because the measure was miscategorized as a maintenance/repair project and ineligible. However, the project was a new construction project.

COMMENT ON METHODOLOGY

The Variable Frequency Drive (VFD) on this process pump had been bypassed (because of operational and reliability issues) since 7/06. This project entailed replacing the control power system and relay protection, so that the pump could operate in variable speed again. Savings of 3,015,908 kWh/yr and 354.8 kW were reported.

Since the VFD had not been operable for two years, program rules dictate that this project be treated like a New Construction project, where the baseline is constant speed operation, not a maintenance/repair project. Furthermore, the cost of replacing the control power system was over $200,000 which is approximately the cost of installing a new VFD, more than just a minor repair. The project was performed to save energy, not just to improve reliability. The FSR states on pages 4 and 6 that the "upgrade" saved energy, and they had no issue with the energy savings estimate. PG&E's influence on this project did result in significant energy savings that would not have occurred otherwise.

B063

IOU Project Number: NC0021889

Program Number: PGE2004

SUMMARY

This project entailed the construction of a new RO plant – which resulted in less reinjection pump energy use and less steam generator fan and feedwater pump use. Savings of 3,451,202 kWh/yr and 394 kW were reported. The CPUC calculated savings of -6,006,125 kWh/yr and -1,157 kW.

The CPUC calculations were based on savings during the first year of operation. The reservoir level had only dropped by a fraction of what was expected (pressure verified to be 160 psig). The customer expects a drop to 50 psig after 2 to 3 years of operation. The CPUC's calculations would be closer to PG&E's calculations if they were based on savings after 2 to 3 years. This project was developed when we were still using long term savings, not first year savings.

B093

IOU Project Number: 2K6-L0261

Program Number: PGE2004

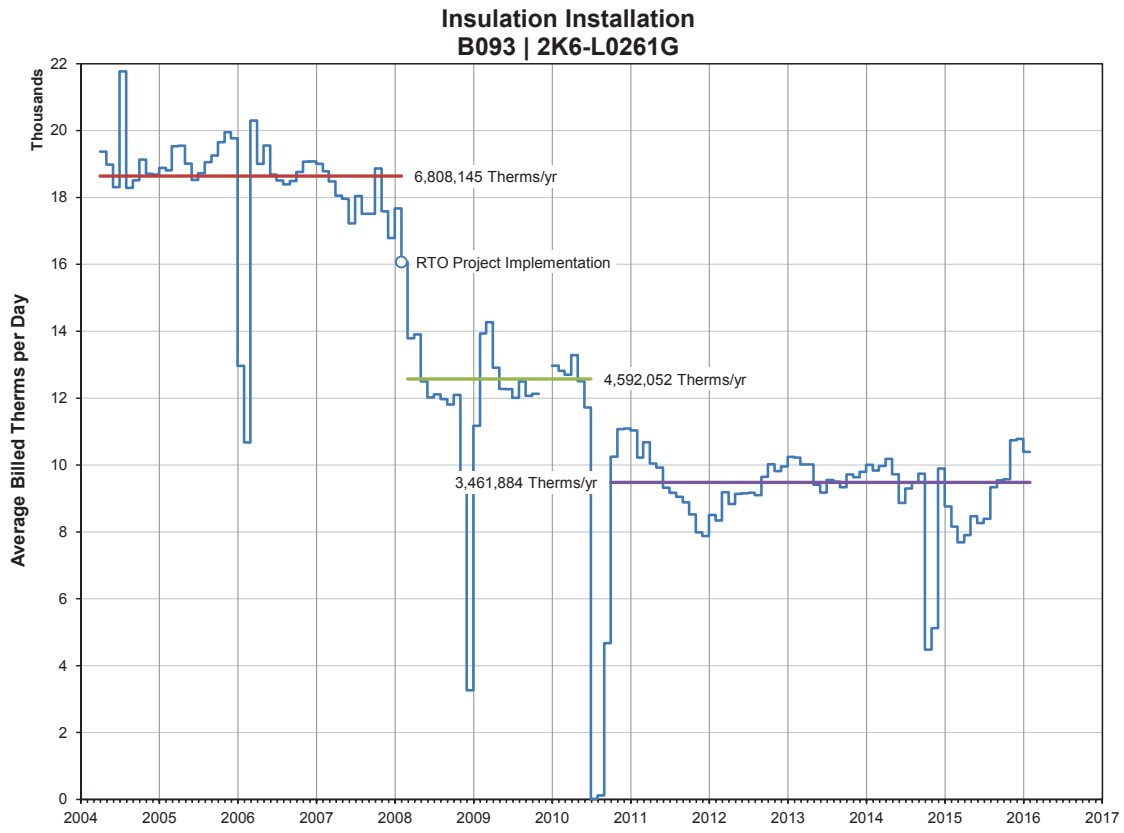
Discrepancy Issue: Calculation Error

SUMMARY

This project consists of the replacement of two non-regenerative thermal oxidizers (simple incinerators) with a single regenerative thermal oxidizer (RTO) for the destruction of volatile organic compounds (VOCs) exhausted in the manufacture of fiberglass insulation. The energy efficiency measure recovered heat was then used to preheat VOC-laden exhaust to a temperature near the VOC combustion temperature.

According to the PG&E's MDSS Customer Usage Database, gas usage decreased by 2,223,159 therms/year from the project's implementation in 2008 till ex post evaluation in October 2009. After mid-2010, the energy savings persisted throughout 2016 with an additional reduction in gas usage of 1,130,168 Therms/year.

It appears that the evaluators did not include the correct gas meters based on a review of the actual usage data and the ex post estimates. Those estimates represent only a fraction of the actual usage data reduction in gas usage. PG&E engineers believe that instead of using the main (whole facility) meter for the ex post reading which matches the ex ante estimates, the evaluators mistakenly read off of one of two of the sub meters. (See "Insulation Chart." Refer to the "Whole Facility Meter" and "Submeters" worksheets for the monthly and daily usage, respectively.)


Insulation Installation
B093 | 2K6-L0261G
Thousands
Average Billed Therms per Day
22
20
18
16
14
12
10
8
6
4
2
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
6,808,145 Therms/yr
RTO Project Implementation
4,592,052 Therms/yr
3,461,884 Therms/yr

B095

IOU Project Number: TAA0001789

Program Number: PGE2042

Discrepancy Issue: Baseline

SUMMARY

The project involved retrofitting a process line at a powder mill processing plant. The Ex-Post evaluation method was Whole Building (IPMVP Option C, Utility Data Analysis).

Lockheed engineers documented the issues with the ex-post evaluation method in the attached WORD file ""Lockheed Martin Comments on CPUC Evaluation - B095 - PGE2042"". In this document they also offer a method which uses historical data to represent the adjusted baseline energy consumption which is consistent with the Program's rules and methods.

COMMENT ON METHODOLOGY

There are many constant loads within the process lines that run regardless of the throughput through each line. Lower production rates come with reduced efficiencies. The evaluators' method did not take this into consideration in their evaluation. The evaluation method should have adjusted the baseline energy consumption based on baseline performance data.

Backup:

Lockheed Martin Comments on CPUC Evaluation – B095 – PGE2042

Introduction

The project involved retrofitting a process line at a powder mill processing plant (Celite) to replace the existing four (4) process lines operation. The CPUC evaluation concluded that there were no savings associated with this project. The evaluators made several major flaws in their methodology that resulted in an erroneous conclusion. Specifically, the evaluators did not adjust the baseline to reflect a decline in production at the facility, and the evaluators used a single data point to establish the post installation energy intensity (kWh/Ton) for determining the ex-post savings. There are many constant loads in these process lines that run regardless of the throughput through each line. Thus, the kWh/Ton is highly driven by the production rate. The lower the production rate, the higher the kWh/Ton. Although the evaluators cite that there was limited data available for the ex-post savings calculation, the use of a single data point (one month) to determine annual energy savings is inappropriate. The following document provides a brief description of Lockheed Martin’s (LM) initial savings analysis and an illustration of the correct procedure to evaluate the project.

Lockheed Martin's Original Savings Analysis

LM's savings analysis calculated the baseline and retrofit kWh/ton for the product lines associated with the retrofit. Celite provided a production projection for 2009 of 140,000 Tons and this value was used as a basis to evaluate the energy savings. Since Celite's projection was similar to the production from previous years, in which the baseline kWh/ton was established, LM assumed the average production rate (Tons/hr) would be similar to the baseline conditions. Thus, there was no need to adjust this baseline.

CPUC Evaluators Savings Analysis

The evaluators state that they utilized IPMVP Option B: Retrofit Isolation as the M&V approach. However, this is incorrect and it appears that the method used was IPMVP Option C: Whole Facility. If Option B was used, it would be expected that much more detailed energy measurements would have been collected. The report indicates that PG&E whole facility meter and Celite sub-meters were used for some of the lines. Sub-metering was not available for all lines. So, in this instance, the energy consumption was calculated based on reported hours and an estimated demand. To be IPMVP compliant for Option B, all parameters must be measured. Please note that the overall savings are in the range of 25% of the facility meter. Thus, Option C is an acceptable option provided that the proper adjustments are made.

Production and energy consumption data for the single month of August 2009 was used to verify the savings claims for the project. Actual production at the site in August was 8,028 tons. Projected monthly production, derived by dividing the annual production by twelve months, was 11,667 tons. So the actual production is 31% below the projected ((11,667-8,028)/11,667) Since the kWh/Ton of the production line is extremely dependent on the production rate (See the charts below for the different production lines), the baseline should have been adjusted in the evaluator's analysis.

The 300 kWh/ton baseline production efficiency noted in the evaluation was based on a much higher production rate than the performance period. Additionally, this approach does not account for the different production efficiencies of each production line. Thus, this baseline is not an accurate representation of what the existing set of production lines would have consumed under the same performance period operating conditions.

Regression Analysis

Given that the production has decreased in the Performance Period, a regression analysis should have been performed to estimate the energy savings. Lockheed Martin did not perform a regression analysis for the project because the projected production for 2009 was similar to the baseline period. Thus, any adjustments were not required.

LM has recalculated the savings for the project based on the August 2009 data point provided in the evaluation. Please note that while this provides an estimate of the potential energy savings, more data should be gathered and analysis should be performed to verify the actual energy

savings for the project. LM is committed to providing support in the verification of the energy savings for this project. Below is a summary of the key components to this analysis.

Baseline data was graphed and a regression equation was generated as shown in the Figures above. Please note that production lines #3 and #6 have R-squared values of 0.85 and 0.83, respectively. IPMVP Section B-2.2.1 indicates that an R-squared greater than 0.75 is often considered a reasonable indicator of a good relationship between energy and the independent variable. For production line #5, the R-squared is 0.6. This indicates that some of the variation is described by this variable but more analysis and investigation should be performed to identify the additional parameters that are driving the energy consumption on this line.

The reported performance period production (August 2009) was 8,028 tons. The estimated production that would have occurred through each of the baseline production lines was based on the percentage of tons produced for each line. An example calculation is provided below:

$$P_{\#3-Adj-Base} = \left(P_{Ret}\right)\left(\frac{P_{Base-\#3}}{P_{Base-Total}}\right) \quad \text{EQ 1}$$

Where:

$P_{\#3\text{-}Adj\text{-}Base}$ = Adjusted baseline production for line #3 (Tons)

P_{Ret} = Total production during the performance period (Tons)

$P_{Base\text{-}\#3}$ = Total production through line #3 for the baseline period (Tons)

$P_{Base\text{-}Total}$ = Total production through all lines included in the retrofit for the baseline period (Tons)

The results are provided in Table 1 below

Parameter	Production Line #3	Production Line #5	Production Line #6	Total
Total Baseline Production (Tons)	57,820	81,229	133,806	282,515
Percent Production	21%	30%	49%	100%
Performance Period Projected Production (Aug-09) (Tons)	1,701	2,390	3,937	8,028

Table-1 Production Data Baseline Adjustments

The regression equations illustrated in the corner of the figures above should then be used to estimate the adjusted baseline energy consumption using the estimated baseline Tons located in Table-1. The PG&E utility data for August 2009 can be used as an estimate of the retrofit energy consumption provided that the non-project related energy consumption is added to the adjusted

baseline consumption for the systems. An average of the non-project related consumption over the baseline period was calculated. The total facility adjusted baseline consumption could be calculated with the following equation.

$$kWh_{Base-Fac} = kWh_{Base-Sys} - kWh_{Non-Project} \quad \text{EQ 2}$$

Where:

$kWh_{Base-Fac}$ = Total estimated baseline facility consumption for the Performance Period (kWh)

$kWh_{Base-Sys}$ = Estimated energy consumption of the production lines during the Performance Period from the regression equations (kWh)

$kWh_{Non-Project}$ = Average non-project related energy consumption (kWh)

This analysis results in the following energy consumption values.

Parameter	**Value (kWh)**
Estimated August 2009 Production Baseline Energy Consumption	2,412,597
Average Non-Project Related Energy Consumption	3,270,476
Total Facility Baseline for August 2009	5,683,073
Total PG&E Meter Consumption for August 2009	4,457,493
Estimated August 2009 Energy Savings	1,225,580
Estimated Annual Savings	**14,706,961**

Table-2 Energy Consumption and Savings Estimates

Lockheed Martin believes there is significant energy savings associated with this project when the analysis is performed under industry standard and proper techniques. LM also understands that more data and analysis is required to refine the energy savings illustrated in Table-2 above. LM is committed to providing the necessary documentation to support the energy savings for this project.

B097

IOU Project Number: 2K07000022

Program Number: PGE2004

Program Name: Customized Retrofit

Discrepancy Issue: Incorrect Calculation of kW Adjustment Factors for Pump-off Controllers

SUMMARY

A general approach was used by the CPUC for all POC projects that were evaluated from 2006-08. For this project, a sample of 72 wells were analyzed at other Kern River projects, to develop the load factors and run times that are used in this energy savings calculation. The kW adjustment factor is based on a total of 28 wells that were monitored at two other sites (13 at Kern and 15 at Midway Sunset fields) to apply to the 1266 POC projects implemented by PG&E. Savings of 10,096,226 kWh/yr and 1,002 kW were reported for B097. The CPUC calculated savings of 4,814,890 kWh/yr and 479.9 kW.

FACTUAL ERROR

There is a problem with the accuracy of data collected at Midway Sunset, that is used to develop the kW adjustment factor. Several wells had negative savings (which is impossible) and the kW adjustment factors had an unusually wide range (33% to 163%, averaging 64% +/-33.9%). One would expect the average to be similar to the Kern River results of 95.1% +/-9.0%, and to the 2010-12 evaluation results of 94.4% +/-4.2%. The Midway Sunset results should not be used, since there is no reasonable explanation for their difference.

A kW adjustment factor of 95% should be used, instead of the 78.4% factor that was used in B046. This would increase the CPUC's savings estimate by 21%.

There is also an issue of using long term runtimes that differ from short term runtimes, and not using the correct adjustment factors for kW, since the actual kW varies with runtime. The CPUC simply used the ratio of runtimes to adjust kW.

Other issues are presented in the POC Issue 2006-08_1 22 2016 paper that was recently developed.

Backup:

B097 – Installation of 939 POCs on rod beam pumps

Pre Report – various

Post-installation Report – various

A general approach was used by the CPUC for all POC projects that were evaluated from 2006-08. For this project, a sample of 72 wells were analyzed at other Kern River projects, to

develop the load factors and run times that are used in this energy savings calculation. The kW adjustment factor is based on a total of 28 wells that were monitored at two other sites (13 at Kern and 15 at Midway Sunset fields) to apply to the 1266 POC projects implemented by PG&E. Savings of 10,096,226 kWh/yr and 1,002 kW were reported for B097. The CPUC calculated savings of 4,814,890 kWh/yr and 479.9 kW.

There is a problem with the accuracy of data collected at Midway Sunset, that is used to develop the kW adjustment factor. Several wells had negative savings (which is impossible) and the kW adjustment factors had an unusually wide range (33% to 163%, averaging 64% +/-33.9%). One would expect the average to be similar to the Kern River results of 95.1% +/-9.0%, and to the 2010-12 evaluation results of 94.4% +/-4.2%. The Midway Sunset results should not be used, since there is no reasonable explanation for their difference.

A kW adjustment factor of 95% should be used, instead of the 78.4% factor that was used in B046. This would increase the CPUC's savings estimate by 21%.

There is also an issue of using long term runtimes that differ from short term runtimes, and not using the correct adjustment factors for kW, since the actual kW varies with runtime. The CPUC simply used the ratio of runtimes to adjust kW.

Other issues are presented in the POC Issue 2006-08_1 22 2016… paper, that was recently developed.

B100

IOU Project Number: CDI0000066

Program Number: PGE2058

Discrepancy Issue: Incorrect Calculation of kW Adjustment Factors for Pump-off Controllers

SUMMARY

A general approach was used by the CPUC for all POC projects that were evaluated from 2006-08. For this project of 77 POCs, a sample of 24 wells were analyzed at five other Kern River projects with 193 POCs, to develop the load factors and run times that are used in this energy savings calculation.

FACTUAL ERROR

There is a problem with the accuracy of data collected at Midway Sunset, that is used to develop the kW adjustment factor. Several wells had negative savings (which is impossible) and the kW adjustment factors had an unusually wide range (33% to 163%, averaging 64% +/-33.9%). One would expect the average to be similar to the Kern River results of 95.1% +/-9.0%, and to the 2010-12 evaluation results of 94.4% +/-4.2%. The Midway Sunset results should not be used, since there is no reasonable explanation for their difference.

A kW adjustment factor of 95% should be used, instead of the 78.4% factor that was used in B100. This would increase the CPUC's savings estimate by 21%.

There is also an issue of using long term runtimes that differ from short term runtimes, and not using the correct adjustment factors for kW, since the actual kW varies with runtime. The CPUC simply used the ratio of runtimes to adjust kW. Other issues are presented in the POC Issue 2006-08_1 22 2016… paper, that was recently developed.

Backup:

B100 – Install POCs on rod beam pumps

Pre Report – various

Post-installation Report – various

A general approach was used by the CPUC for all POC projects that were evaluated from 2006-08. For this project of 77 POCs, a sample of 24 wells were analyzed at five other Kern River projects with 193 POCs, to develop the load factors and run times that are used in this energy savings calculation. The kW adjustment factor is based on a total of 28 wells that were monitored at two other sites (13 at Kern and 15 at Midway Sunset fields) to apply to the 1266 POC projects implemented by PG&E. Savings of 2,979,033 kWh/yr and 347 kW were reported for B100. The CPUC calculated savings of 733,726 kWh/yr and 101.3 kW.

There is a problem with the accuracy of data collected at Midway Sunset, that is used to develop the kW adjustment factor. Several wells had negative savings (which is impossible) and the kW adjustment factors had an unusually wide range (33% to 163%, averaging 64% +/-33.9%). One would expect the average to be similar to the Kern River results of 95.1% +/-9.0%, and to the 2010-12 evaluation results of 94.4% +/-4.2%. The Midway Sunset results should not be used, since there is no reasonable explanation for their difference.

A kW adjustment factor of 95% should be used, instead of the 78.4% factor that was used in B100. This would increase the CPUC's savings estimate by 21%.

There is also an issue of using long term runtimes that differ from short term runtimes, and not using the correct adjustment factors for kW, since the actual kW varies with runtime. The CPUC simply used the ratio of runtimes to adjust kW.

Other issues are presented in the POC Issue 2006-08_1 22 2016… paper, that was recently developed.

B096

IOU Project Number: CDI0000066

Program Name: WWTP

Discrepancy Issue: Operating Conditions

The measure was not operational temporarily. The facility had a firm restoration schedule. Due to a wintertime infestation of Nocardia (bacteria), the equipment was temporarily offline.

APPENDIX B.5

APPENDIX B.5

METHOD FOR IMPLEMENTING THE RECALIBRATION OF GOALS

Background and Objective: The 2004-08 Energy Efficiency goals were developed in 2002-03, using data from the 1990s and early 2000s. While this was the best available data at the time, what we have come to learn is that there were big differences between the underlying assumptions that were the basis for the goals and the evaluated results of program activities in those years. These included: peak to energy ratios, unit energy savings, net to gross ratios, among others. This exercise aims to set goals on a comparable basis to how programs were evaluated by using updated underlying assumptions from 2006-08 evaluation results.[1]

Rationale: Very important inputs for setting goals (e.g. the peak to energy ratio, net to gross ratios, and interactive effects) were not well studied when the goals studies were conducted in 2002-03. The result was the use of overly optimistic assumptions in setting IOU goals. The three large discrepancies are:

- Peak to energy ratio: The 2006-08 peak (MW) goal was set using the peak to energy ratio from the IOUs 2004-05 portfolio applications. Actual results from 2006-08 yielded a significantly lower peak to energy ratio, resulting in a goal for PG&E that was 100 MWs or 20% greater than it should have been. PG&E has applied this evaluated peak to energy ratio to the original goals as part of this recalibration.
- Interactive Effects: 2006-08 goals did not include the impacts of negative therm interactive effects. During the 2006-08 cycle, negative therm interactive effects were incorporated into DEER saving values, resulting in significant negative therm savings. D.09-05-037 (May 2009) reduced PG&E's therm goal by 26% for 2009-11 to account for interactive effects that were not included in the goals studies that informed the 2004 goals decision. D.09-12-045 (December 2009), the RRIM claims decision, recognized that this was also an issue for 2006-08. As part of this decision, therm goals were reduced 11% for PG&E, with additional changes deferred to the 2010 RRIM true up. However, the 2010 RRIM true up decision (D.10-12-049) declined to resolve this issue, as it would not have had any material impact to the incentive awarded. PG&E has applied the same reduction approved in D.09-05-037, 26%, as part of this goals recalibration.
- Net to gross ratios: 2006-08 goals were set on a net basis, but the net savings projections relied on overly optimistic assumptions about the level of freeridership in IOU programs. Net to gross ratios ranged from 0.92-0.94 for GWhs, MWs, and MMTherms in the potential studies. In other words, only 6-8% of participants in the program would have adopted the EE product in the absence of the programs. 2006-08 evaluation results showed that these estimates were much too high. Evaluated net to gross ratios were actually in the range of 0.47-0.62, resulting in goals that were 50-100% greater than they should have been on a net basis. This discrepancy was also ultimately acknowledged by

[1] There is support for this. Commissioner Grueneich noted that "the utilities have argued, with some reason, that in updating the assumptions underlying the goals, we moved the goal posts mid-kick" (Concurrence to decision 09-12-045).

the Commission in D.08-07-047 (July 2008) by modifying future goals to be on a gross basis, rather than a net basis. As part of this recalibration, PG&E has adjusted the goals to align with the 2006-08 evaluation results.

Process: The following details key components that were evaluated as part of this recalibration process and how goals were updated to align with evaluated results.

Note that the analysis includes two scenarios: one with 2004-08 cumulative savings goals and one with 2006-08 cumulative savings goals. This is to account for the decision in D.09-12-045 to remove 04-05 goals for incentive calculation purposes.

Sources and definitions:

- Rufo, Michael, and Fred Coito, "California's Secret Energy Surplus: The Potential for Energy Efficiency," Xenergy Inc., funded by Hewlett Foundation, September 23, 2002 (hereinafter: "Secret Surplus Study"). This study formed the foundation for the goals that were set in D.04-09-060.
- Rufo, Michael, and Fred Coito, "California Statewide Commercial Sector Energy Efficiency Potential Study," volumes 1 and 2, Xenergy Inc., July 9, 2002 (hereinafter: "2002 Commercial Potential Study"). This study informed the Secret Surplus Study.
- Rufo, Michael, and Fred Coito, "California Statewide Commercial Sector Natural Gas Energy Efficiency Potential Study," volumes 1 and 2, Xenergy Inc., May 14, 2003 (hereinafter: "2003 Commercial Gas Potential Study"). This study informed gas goals set in D.04-09-060.
- Rufo, Michael, and Fred Coito, "California Statewide Residential Sector Energy Efficiency Potential Study," volumes 1 and 2, Xenergy Inc., April, 2003 (hereinafter: "2003 Residential Potential Study"). This study informed the Secret Surplus Study.
- 2004 CEC IEPR Statewide goals report, which drew from the three previous studies
- 2004 Joint Staff report, which provided CPUC goals recommendations. Note that this study had been posted on the CPUC website, but is no longer available.

- Peak to energy ratio: Peak MW goals were developed using the peak to energy ratio from each utility's 2004-05 EE filings (D.04-09-060 p 28 for discussion and Table 1E, footnote 2 for exact value). For PG&E this ratio was 0.217. This was a fairly simplistic approach to estimating peak, but was typical at the time, given the lack of available peak impact analysis on a technology by technology basis (typically an end-use metering study that estimates technology level product utilization and energy usage at peak hours of the year, a large effort that would be done independent of a potential study). For example, the 2001 DEER Update, which formed the foundation of much of the 2002-03 potential studies, did not include peak savings values. The following analysis shows how peak savings goals would change using the updated peak to energy ratio based on the savings the utilities have been credited:

PG&E Table B-1
2004-2008 Goals Scenario

Savings Goals	PY 2004-2008	04-05 EM&V Adjusted EE Portfolio Savings	06-08 EE Portfolio Savings (adjusted ex-ante)	04-08 Total	PY 2004-2008 w/ updated peak to energy ratio	% greater 06-08 goals were
Total Cumulative Savings (GWH)	4,313.0	998.2	1,765.9	2,764.1	4,313.0	0%
Total Peak Savings (MW)	936.0	212.3	320.0	532.3	830.6	13%
Total Cumulative Natural Gas Savings (MMTh)	64.4	19.1	22.3	41.4	64.4	0%
Peak to energy ratio	0.217			0.193		

PG&E Table B-2
2006-2008 Goals Scenario

Savings Goals	PY 2006-2008	06-08 EE Portfolio Savings (adjusted ex-ante)	PY 2006-2008 w/ updated peak to energy ratio	% greater 06-08 goals were
Total Cumulative Savings (GWH)	2,826.0	1,765.9	2,826.0	0%
Total Peak Savings (MW)	613.0	320.0	512.1	20%
Total Cumulative Natural Gas Savings (MMTh)	44.8	22.3	44.8	0%
Peak to energy ratio	0.217	0.181		

- Interactive Effects: 2006-08 goals did not include the impacts of negative therm interactive effects. During the 2006-08 cycle, negative therm interactive effects were incorporated into DEER saving values, resulting in significant negative therm savings. D.09-05-037 (May 2009) reduced PG&E's therm goal by 26% for 2009-11 to account for interactive effects that were not included in the goals studies that informed the 2004 goals decision. D.09-12-045 (December 2009), the RRIM claims decision, recognized that this was also an issue for 2006-08. As part of this decision, therm goals were reduced 11% for PG&E, with additional changes deferred to the 2010 RRIM true up. However, the 2010 RRIM true up decision (D.10-12-049) declined to resolve this issue, as it would not have had any material impact to the incentive awarded. PG&E believes that the same reduction approved in D.09-05-037, 26%, should be included in a goals recalibration, as illustrated in the following tables:

PG&E Table B-3
2004-2008 Goals Scenario

Savings Goals	PY 2004-2008	PY 2004-2008 with 26% therm adjustment
Total Cumulative Savings (GWH)	4,313.0	4,313.0
Total Peak Savings (MW)	830.6	830.6
Total Cumulative Natural Gas Savings (MMTh)	64.4	47.7
D.09-05-037 Interactive effect therm reduction	26%	

PG&E Table B-4
2006-2008 Goals Scenario

Savings Goals	PY 2004-2008	PY 2004-2008 with 26% therm adjustment
Total Cumulative Savings (GWH)	2,826.0	2,826.0
Total Peak Savings (MW)	512.1	512.1
Total Cumulative Natural Gas Savings (MMTh)	44.8	33.2
D.09-05-037 Interactive effect therm reduction	26%	

- Net to gross adjustment: In the Secret Surplus Study and Xenergy Potential Studies, net to gross ratios are in the range of 0.92-0.94. This was arrived at by estimating the naturally occurring levels from Figures 3-5, 3-7, and 3-23 in the Secret Surplus Study and comparing them to the max efficiency levels in table 3-1 (the levels determined to be reasonable in D.04-09-060, page 9). The Secret Surplus Study did not include gas potential. The Commercial Gas Potential Study and Residential Potential Study were consulted for net to gross values in those studies. The following table includes the combined residential and commercial potential from those two studies.

PG&E Table B-5
Combined Residential and Commercial Potential

	Naturally Occurring	Max Efficiency	Net to gross ratio
GWhs*	2500	30090	0.92
MWs*	425	5902	0.93
MMTherms**	25	450	0.94
*Table 3-1, Secret Surplus Study			
**Figures 7-1, 7-2, Commercial Gas Potential Study; Figures 9-1, 9-2 Residential Potential Study			

We can now apply these to the goals, adjusted for the updated peak to energy ratio, to arrive at recalibrated goals for updated net to gross ratios:

PG&E Table B-6
Cumulative 2004-2008 Goals Scenario

a	b	c	d	e	f	g	h	i
	Net to gross in original goals	2006-08 Evaluated Gross*	2006-08 Evaluated Net*	Net to gross ratio (2006-08 evaluated)	2004-08 Goals Net (w/ peak to energy and interactive effect adjustment)	2004-08 Goals Gross (f / b)	2004-08 Goals Net Adjusted (g * e)	% greater 06-08 goals were
GWhs	0.92	2999	1766	0.59	4,313.0	4,704	2,769.9	56%
MWs	0.93	513	320	0.62	830.6	895	558.3	49%
MMTherms	0.94	47	22	0.47	47.7	51	23.7	101%
*PG&E Saving Impacts, Table 27, 2006-08 Evaluation Report								

PG&E Table B-7
Cumulative 2006-2008 Goals Scenario

a	b	c	d	e	f	g	h	i
	Net to gross in original goals	2006-08 Evaluated Gross*	2006-08 Evaluated Net*	Net to gross ratio (2006-08 evaluated)	2004-08 Goals Net (w/ peak to energy and interactive effect adjustment)	2004-08 Goals Gross (f / b)	2004-08 Goals Net Adjusted (g * e)	% greater 06-08 goals were
GWhs	0.92	2999	1766	0.59	2,826.0	3,082	1,814.9	56%
MWs	0.93	513	320	0.62	512.1	552	344.2	49%
MMTherms	0.94	47	22	0.47	33.2	35	16.5	101%
*PG&E Saving Impacts, Table 27, 2006-08 Evaluation Report								

- Goals Evolution:
  - D.04-09-060 (September 2004) set IOU EE goals for 2004-2013 (see below for background on goals studies)
  - D.08-07-047 (July 2008, section 4.3) retained the same goals established in D.04-09-060 for 2009-11, but changed the goals from a net basis to a gross basis. The rationale for this was that the original goals, on a gross basis, fairly closely approximated the 2008 Itron Potential Study
  - D.09-12-045 (December 2009) modified these goals to exclude 2004-05 goals in cumulative goals accounting for shareholder incentive purposes. It also reduced PG&E's therm goal from 44.8 MMTherms for 2006-08 to 39.9 MMTherms for earnings purposes as an ad hoc fix, deferring formal therm goal reductions due to negative therm interactive effects to the December 2010 true up decision.

- D.09-05-037 (May 2009) redefined cumulative savings to start in 2006, rather than 2004 for the 2009-11 period. It also reduced PG&E's therm goal by 26% to account for interactive effects that were not included in the goals studies that informed D.04-09-060.
- D.10-12-049 (December 2010) was the true up decision for 2006-08. This decision was tasked with revising therm goals due to negative therm interactive effects, however, a change in the therm goal would not have impacted the incentive award in this decision, therefore, the decision did not make any changes to the therm goal.